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HUMAN VALUES AND VERITIES

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HUMAN VALUES
AND
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BY
HENRY OSBORN TAYLOR
1856–

New York
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TO

J. I. T.

PREFACE

People have always imagined what humanity might be in its completion and wholeness. Without unduly brooding on that happy consummation, I have spent many years systematically studying what the salient exemplars of human excellence have deemed to be the best for man, and have set themselves either to reach or to express. In this way I have followed down the centuries the changing ideals of mankind, seeking them most assiduously along those avenues of collective effort known as science, philosophy, religion, art.

These forms of knowledge and attainment have found their places in the books which I have written, and, of course, have entered into my own development. Nearing the close of my long education, a yearning for synthesis urged me to one more effort. There was the need to put my thoughts together touching all these matters which had formed and had not yet done forming me. My own satisfaction demanded an estimate *raisonée*, analytical, topical. This book is the result of my need and my attempt to meet it.

Beyond my personal appreciation and estimate of these broad topics I have sought to make use of a further criterion. Since human values and validities are the effects, if not the very functioning itself, of human faculties, the best test of worth in any given instance would seem to lie in the corroboration or criticism issuing from the action of all the faculties (or, if one will, phases of human faculty) which may bear upon the value or validity in question, or may be brought into relation with it by the man's subsequent experience. In their joint or common action the faculties or qualities of a man's nature may criticize, and may explicitly or tacitly confirm or reject, some act or accomplishment or conclusion that in itself seems to be the work of one of them.

For example, the rational nature of an individual, or of many individuals, operating through the forms of philosophy and science, may create a group of values and the complementary or supporting convictions as to fact or truth, which I call validities. The intuitive or impulsive faculties may create other groups. The values and validities reached or created by the one may or may not accord with those of the other. But we can conceive the total nature and faculty of man working towards some adjustment of them, some reconciling or discriminating verdict, and thus arriving at a higher value

and a more broadly tested truth. For the individual the final verdict upon the value of a given effort or the validity of a thought lies in the concert of his faculties—if such agreement can be found. This is what I fondly call the appeal to the whole man.

Indeed I recognize the vagueness of my words and the difficulty of making this idea either clear or workable. But I resolutely grope toward it, and am cheered by fancying it to be no more obscure than definitions of human faculties—reason, intuition, emotion, impulse, purpose, desire, passion. For the definitions are but a make-believe of words. Though our faculties may work in the full flare of our self-consciousness, they defy analysis.

I think this criterion becomes clearer when it is expanded and applied to the larger result of the endeavour of a race. The criterion is still essentially the same, though the field of reference broadens. Thus applied, this same criterion becomes the experience and catholic attainment of the race or, indeed, of mankind. The divers avenues of human effort correspond to the various faculties of an individual. Touching the achievement reached along one of these avenues we seek the verdict of human experience in the large, as in the case of an individual we look to the mutually corroborative judgement of his faculties. In the pursuit of such a verdict, if I only

had the genius, I would bring philosophy, science, religion, art, even the practical life—each one of these questing modes of the human spirit—to the bar and judgement of the rest. Philosophy, religion, art and conduct should reflect upon the worth and truth of science, or science and its sisters pass upon the ways and convictions of religion. Not that an explicit utterance is to be expected from each of these branches of human endeavour. But any one of them may present its own worth and truth as a measure of what is offered by another, and just through being itself may indicate the other's points of failure or merit.

These ideas are enlarged upon in my first and final chapters. But the first chapter is more especially intended to make clear my conception of human values and the validities which complement and support them in our natures. My conception is not novel in itself. Yet I have worked it out in my own way or, rather, in the way of personal experience,—as is apt to be the case with anything that is to be of real worth or interest to one.

I wish to thank various friends for criticism and suggestion. Dr. A. N. Whitehead, in his generous amiability, has listened to the reading of most of my book. Dr. Edwin B. Wilson of the Harvard School of Public Health went carefully over my chapter on Science, and Dr. Alfred E. Cohn of

The Rockefeller Institute, New York, criticized the same chapter during its writing. Dr. Cohn has also won my gratitude by going over the proof. Of course, my universal and invaluable critic is my wife.

HENRY OSBORN TAYLOR.

New York,
January 1928.

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CHAPTER I

VALUES AND VALIDITIES

I

The Functioning of Faculty

I have never cared for any division of human mentality into faculties. The parts may differ in function or process, yet are fundamentally or, as it were, genetically, phases of each other, and are rooted rather indistinguishably in that somehow working unity which is man. The processes of the mind may appear distinguishable as processes, but never as the products of separately working faculties. When I speak of reason, understanding, intuition, and feeling in its many moods and emotional activities, the different terms quite properly mark my realization of a difference, perhaps an incommensurability, in function, in process. The mind functioning as intelligence or reason differs from the mind under the sway of emotion, which may either darken or illuminate it.

Analytically and actually we may be justified in speaking of the different functions or processes of the

mind or psyche, or of the manifold neurological or psychological phenomena of man. I cannot help distinguishing between thought and emotion, and perhaps may discriminate between reflection, contemplation, intuition, and so forth, as well as between love, adoration, hatred, fear, and their many shades and combinations. To search behind these facts and tabulate their origins still baffles everyone.

I hesitate also to distinguish too sharply or separate these apparently different functions or processes even in their conduct or results. For often thought and feeling are interwoven; each influences the conduct of the other, and both join effectively in shaping whatever act or decision, or so-called intellectual conviction, may issue from the game. Possibly in all thinking, however sheer or pure, there enters an element of effort or conation and something of desire or aversion.[1] Conversely it is hard to imagine any emotion so violent and sudden as to be unaffected by some accompaniment of thought.

One therefore should expect to find all phases of faculty in some way affecting a man's estimate of

[1] At all events there is conation in all thinking that involves attention, the self-directing of the mind to an object. It is not hard to see how some union or co-operation of various faculties is required for any considerable achievement. A man may have excellent powers of observation and reason, but he will not accomplish any great thing unless he possess the ethical stability involved in any constant purpose, as well as some sense of responsibility toward the purpose or end which he would reach.

what is good and desirable, entering his judgement as to what is valid or true, and influencing his conduct. And as this principle holds as to the acts and opinions of an individual, so it applies to the accomplishment of a race.

No individual nor any race in history has ever presented the round of human genius in the full. Yet some of the great races seem intellectually and temperamentally self-sufficing. Certainly the interplay of a most generous complement of human faculty has been shown in the history of the Greeks, the Italians, the English, French, or Germans. And as one thinks of what these peoples have done in science, philosophy, and art, or in the development of social and political institutions, one sees that all phases of human temper and feeling, as well as intelligence, have contributed to the result. Yet in the different branches of accomplishment, whether individual or racial, some phases of faculty, rather than others, have played the greater rôles.

In observing in myself and in others the various ways in which a man reaches out for what may be of worth to him, I perceive different phases of faculty engaged and a corresponding difference in the method of their action. Certain methods agree with predominant intellectual activity, while other ways would be taken by the mind when under the sway of impulse and temperament. From the very form of intellectual activity flow methods which have been followed by science and philosophy in arriving at valid conclusions of fact, or principles of truth.

The character of the method is evidence of the dominance of intellect over emotional impulse in these two avenues of human endeavour.

A more potent measure of feeling enters the religious understanding of fact and appreciation of value. It may be that religion and the greater moods of art, and possibly the loftier stages of practical life, employ a fuller round of human faculty than science or philosophy. In less explicitly reasoned and documented manner, they may perhaps present, or, as it were, exemplify, the broadest conclusions as to what is best or wisest or even truest for mankind.[1]

A tendency of modern psychology is to lay stress upon various qualities and impulses of men and women which are not rational or consciously purposeful, and may not be distinctively human. Human conduct and human thinking spring from the broad earth of animal nature ; neither will they ever depart from the pointings of all that entered into their inception. And it may be that the obscure currents, grouped under the Unconscious or Subconscious, never cease to exert some propelling or shaping influence upon the proudest thoughts and actions of our most vivid moments.

The action or functioning of these basal elements of human nature are ingredients in complex and finished human conduct. Or if the acts or impulses, say of fear or anger or love, be taken by themselves, they may claim a self-assertive force or value, or

[1] Cf. *post*, Chapter VII. II.

validity for that matter, entitling them to consideration along with the values and validities of our distinctively human, consciously rational, phases.

II

Human Values

One may regard happiness as realization in both senses of this term: the conscious substantiating conception, in the mind, of a project, end, or object, and, next, the bringing of the same to actuality or reality through its accomplishment. In these two proper senses realization includes the states of human happiness implied in such ideas as arrival, fulfilment, possession.

Realization is achieved through exercise of human powers along chosen paths of effort and attainment. In science and philosophy our adumbration, glimpse, intuitive insight or idea, becomes explicit and realizes itself in formal statement in our mind, and in outer substantiation through intellectual labour. This is a carrying out, a true fulfilment or actualization of the philosopher's or the scientist's nature and potentialities. For him it is happiness.

In religion realization becomes even more—a realization of the relationship between God and man, a realization of our faith in Him, our love of Him and His love for us. It may reach a rapture of

knowledge and certitude in a realization of self and God.

Then there is the realization of love between two human beings. Realization, happiness, lies first in loving and in devotion, in bringing our love for another to full consciousness and actuality. This may take place without return. But if our love be returned, there is added the realization of another's love for us, with a new sense of attainment and possession.

Again, the joy in art comes as realization to both the artist and the art-lover. To the artist it is two-fold, the ideal conception in his mind, and the bringing it to actuality by embodying it in his visible creation. The art-lover does not bring to actuality a conception of his own, but enjoys the realization in his mind of what was first the artist's —though his realization may differ from the artist's meaning. For both artist and art-lover it is the realization of a beauty or perfection.

Turning to active life, we find that it is still the realization, the realized attainment or fulfilment, that is happiness. Here usually it is called success.

Clearly this conception of happiness as realization falls in with the old Aristotelean idea of happiness as consisting in the unimpeded exercise or functioning of our bodily and mental faculties. It is also linked to my long-cherished conviction that the endeavour, rather than the tangible result, is the veritable human element in all achievement. And nothing that has been said need militate against the

very germane advisability that everyone in setting an object of endeavour before himself shall form an estimate of his powers and choose the vocation suited to his ability as well as nearest to his heart's desire.

Realization seems exchangeable with function or functioning, of which it is the complete and satisfying form. In such realizations, or functionings, are found the most germane and veritable values and validities of human life ; for these realizations are part of the man himself ; nay, we may regard them as the evolution or realization of the Self.

What is called pleasure usually is thought of as happiness of a casual or transient sort. A pleasure may have value, and yet not last ; for none does. Pleasure, like its occasion, passes. The desirable pleasure is one that befits yourself, works in with your self-fulfilment and prospect of happiness to come, and will be pleasant, not painful, to look back upon.

Thus I have sought to bring my ideas of values into organic relation with myself, or with other men for whom " values " arise. What is of value to a man comes as an interwoven or organic response to a desire or activity of his own ; in general, to his impulse to live and function. Nothing is of value to a dead man. Indeed what is of human value seems identical with the very functioning itself of human faculty.

Yet there is need to distinguish between an outside source or stimulus and the value, the human

value, itself. The source or stimulus seems to lie in the environment of our sentient and perceptive natures. I should include in *my* environment, not merely other men and Nature, but my own body. If our philosophy makes us extreme idealists, like Bishop Berkeley, the *esse* becomes *percipi*, and the world is but a manifold of our perceptions, or of our psychic functions in general. If, however, we are sturdy realists, the world and other men and our own bodies are really existent, and there is a manifold of things veritably presenting themselves to our perceptions and desires, to our total life or functioning. A philosopher and realist may be moved to say that every external thing or event has a *raison d'être* or value of its own, belonging to the event or thing and its relationships. But I am concerned only with human values, values for men. These depend on us, on our sensations, perceptions, desires, estimates, and final judgements. They inhere in these functions of ours as part and parcel of their activities. The visibilities of nature can present no values to the blind, nor can audible music to the deaf. The value of the beautiful landscape varies with the sensitiveness of each beholder. Chinese music has a value for the Chinese which it has not for Europeans. The value of a symphony or a poem or a statue is a part of my own capacity. It had another value for its creator, and will have still another for some man more or less sensitive and intelligent than myself. An extreme instance would be the different value of a printed page for one who understood and another

who did not know the language. But in itself, apart from human perceptions, the statue is a piece of stone, the printed page a sheet of ink-stamped paper.

So it seems to me that the value for me of any object or event inheres in the activity or functioning of my own nature. My opinion of its importance depends on the criteria of happiness or well-being which I apply to my life and the lives of others. Freedom holds a foremost place among such criteria. And I should esteem the external sources or stimuli according as they occasion the free action of those elements of my nature which are of chief import for my whole co-ordinated life.[1]

[1] I may put in a note what may seem too frivolous for the text. *Value is vanity.* Whenever my functioning or activity is rational rather than impulsive, its object will be some increase of my welfare, of my Self. It is I that must estimate this increase and judge it. I must esteem it, self-esteem it, so to speak. Thus the motive of acting or functioning is to enhance myself in my own eyes or estimation and, since I am a social being, in the eyes of others.

This idea would not include what I do impulsively, when the function or faculty itself presses to action, as when I stretch my legs or yawn, or jump because I feel so fine. Nor would it include what one does out of impulsive feeling for another. The functioning which springs from its own impulse is in itself well-being, happiness. But for continuance beyond the impulsive moment, it will combine with an ulterior motive, as of accomplishing something, writing a book, for instance, and bringing it to a finish.

We climb a mountain, say impulsively, because our joyful strength and jumping legs crave exercise : but we keep on climbing in order to reach the top. So we may write and compose out of the brimming impulse of our mind ; and the

As for our freedom, any dòubt of it counters the resistless convictions of our nature ; which are also fundamental to the rest of our make-up and functioning. Against their certitude the most serried reasonings will break. But reason may be marshalled on their side. Going back to Augustine's " I, who doubt, surely am ", and then coming on to Descartes' *cogito ergo sum*, we see that the ground of the conclusion lies in a direct, intuitive, and irresistible consciousness of existence, or whatever one calls it. So with freedom of thought and will. We may be conscious of thinking with some measure of spontaneity ; and we are directly conscious, in many cases, of our ability to do or refrain. Here, as in the *cogito ergo sum*, direct consciousness overbears any opposing argument of reason. Our consciousness of free determination is on a par with our consciousness of existing.

Thus I have reached some idea of values and some notion of how to estimate their relative importance. Yet I know that what is of worth to one man may be folly to another. And validity, the appreciation of facts and their working, also depends a good deal on the individual. Relative value represents

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writer loves what he is doing. But we keep on with the book in season and out of season, because of the desire to achieve it, complete it. And not for its own sake alone ; but because to drop it would be *lèse majesté* to our self-esteem, while to achieve it will carry out our Selves, realize our powers, manifest them to ourselves and others. We will show what we can do. Our self-esteem, our vanity, demands it.

correspondence to the individual's taste, and validity, or workable truth, represents correspondence to the individual's notion of fact.

But naturally I should like to assure myself that my way of appraising values and deciding upon fact has a justification extending beyond my individual appreciations. There ought to be some rational process, set in general human knowledge and experience, by which standards of worth and truth suitable for thoughtful people might be established. I have tried to think this out along the following lines : We know that mankind is linked to the whole animal kingdom. Yet we have taken to ourselves as well some general conviction of an evolution or progressive series, in which the last term is enormously superior to the first. There is a greater manifold of power and life in man than in a lemur, one of his imagined ancestors. Apparently humanity has lost little either of what was possessed by the members of past series of organisms or of what is enjoyed throughout the contemporary world of animals and plants. Man is big enough—the hugest animals have not proved themselves the fittest to survive. His individual span of life compares favourably with that of other living things. Though he has not the strength of the orang-outang, he can get the better of that athletic ape, and is destined to outlast him. It is not muscle, but the nervous system, that is the index of organic excellence—of life. Plants have no palpable nerves ; in animals nerves effectuate the organism, make the animal what it effectively

is ; and the human nervous system is almost immeasurably in advance of all. For this reason, the animal life of man is more than that of other animals; he is the king of animal life.

But beyond the superiority of his physical nervous system, and the mode in which that renders his psychical functions possible or makes an element of their behaviour, it is in his mentality and his mental life that he *par excellence* distances the others. So far does he outdistance them, so exceedingly does he surpass them in degree, that he may be different in kind.

So the life of man includes the ingredients of animal life, so far as they may continue serviceable to this higher organism—animal instincts, feelings, emotions, and the energies which accompany or accomplish them. They have reached a rich complexity in his nature, while at the same time they have been in large measure subordinated to the spiritual ends which are more exclusively his. And among men, those are the greater who draw into their lives the fullest complement of trait, animal and spiritual, and still uphold the latter's primacy.

Evidently, then, if one would determine values for men, and compare their worth, one should consider the whole nature of man, and respect his inheritance of traits partially humanized in him, as well as those which seem to carry from the time of their inception a human character. Then there must be a gradation throughout, possibly even a unification. The great realizations which hold human values and

validities I have just regarded as functionings or realizations of the individual's entire nature, or, as one might say, realizations of the Self. All values, accordingly, should be related to the individual or Self, to his total complex of motives, his whole deliberative consciousness, his past experience subject to recall, his present activities, his purposes for the future. Judgements thus reached as to values by an individual will be more likely to avoid the disproportion springing from passing and disconnected impulses. And although action in accordance may be the direct act of the faculties which it calls into play, those faculties will operate as functions of the whole co-ordinated Self. And that Self being a human Self distinctively, its decisions will make for the ordering of values according to their intrinsic correspondence with what is most distinctive of human life. At the same time, this ordering of values will be fashioned into individuality as each individual personality chooses among them and insists that they be pertinent to his particular ends.[1]

Perhaps I might put the matter in easier language. It may all amount to this, that on the whole the best action for you is what is becoming and not unbecoming, what falls in with your self-respect and the idea

[1] Does not Plato's idea of justice accord with the above train of reasoning? In *Republica*, 441 *sqq.*, it seems to represent a quality which exists when the several parts of our human nature, or the several parts of a state, obey the part which should rule.

you have formed of the sort of person you are or ought to be.

Such seems the character of the best decision possible for the single individual. That which might be still better and yield a more universal canon as to human values would be the judgement of many wise men, or the verdict of past history. United judgements, indeed, are commonly known, and help to determine the judgements of each one of us.

Yet, when I had come to the end of this course of reasoning, a doubt assailed me. Even in the desires of men who seek the best, who possibly would bring the value of each activity to the test of its relation to the whole well-being of the Self or of Society—even in the ideals of such well-meaning and perhaps thoughtful people there seems to be at least some surface incommensurability. Is there, for example, any standard by which to compare the desires and values of an ardent social worker or reformer with the scientist's wish to know and the values answering it? Talking one day with a young friend of mine, and seeing her uninstructed ardour for experiencing "real conditions" by working in a factory and living on the wage, and so eventually helping to better things, I remembered that I had had similar desires and a like judgement of values. Thirty odd years ago it seemed to me for a while that there was nothing better than to "work among the poor". Like ideas had come to me even in my earlier youth; but at this time they rose from a definitely Christian

ardour and a human love. How compare the values corresponding to such ardour with those of my exceedingly steady wish to know? I have little interest now in the values appealing to a social worker, but desire truth, or, at least, to think.

Yet I am unwilling to admit any profound irreconcilable disparity between even such superficial aspects of the Good and the True. The " Good ", like Beauty (as I try to show in my chapter on Art), is not static, but an activity. Therefore love of the Good will naturally translate itself into love of doing good, clearly an activity or functioning of the human spirit. Likewise Truth is an activity or functioning of our minds, and when " reached " is a realization. It seems to me that for the desire of the Good or " to do good ", and the desire for Truth, there is one and the same test and standard of appraisal, which is agreement with and furtherance of the human and social Self, along with the welfare of the Society environing it. For we cannot lift ourselves out of the community, or develop our fullest natures in isolation. The comfort, the maintenance, the well-being of ourselves and our fellows are interwoven.

The wish to know and the wish to do good may each be very wilful, self-assertive. Yet they cannot help but meet in the deep need of knowledge or experience of the Good ; the knowledge of wherein consists the good, the happiness, the well-being of ourselves and others from whose fortunes our own fates cannot be cleanly severed. How can one validly love knowledge save it be that knowledge and

enlightenment which lead on to the best actualizing of our selves? And in the concept of the self-realizing Self, ideals of beneficence unite with such high love of knowledge.

III

Human Validity

As with human values, so with the closely related idea of human validity, verity, truth, the best truth we can reach. That also, it seemed, had to be related to the whole co-ordinated Self and find its criterion in the harmony and assurance of this relationship. Human validities were not to be tested finally by the processes or standard of any single phase or faculty. In the validation of a proposition affecting human life, the whole mind should concur. Whatever we share with other animals—our so-called animal nature—is usually involved, and its demands have to be reckoned with. It may not come into action directly; for the animal part is not concerned with truth.

Here one should be a little more explicit. Perhaps truth cannot be defined; yet one may see how the idea of it emerged. I mean the idea of fact and the notion of the correspondence of our conviction or opinion with a fact; then the conscious desire to know the fact, indeed the thought of knowledge as a good in itself and as a proper end distinct from its usefulness.

The functions of animal life make no distinction between efficacy or serviceableness and validity or truth. Validity still consists in the fulfilment of a need, in the utility or workableness of the means enabling the animal to function. This is the base and compass of his psychical activity. The animal is an unconscious pragmatist. A captive chimpanzee trying to reach the banana by means of a stick or by piling boxes to stand on has no sense of validity beyond the efficacy of the means employed.

Apparently there is no distinction between efficacy and validity with savage man. Nor need we stop with him, since this distinction is still dumb in much of the conduct and thinking of so-called civilized mankind. The common and fundamental functions of our natures hardly call it forth. Yet a conception of truth, reached through further perceptions and reflection, may be present with thoughtful people during phases of conduct which in themselves would have called forth no such discrimination.

In requiring no clear distinction between workableness and truth the practical life of men carries some analogy with religion and art. The religious practices of barbarous peoples draw no lines between effectiveness and truth. Nor in fact does any religion until, rather suicidally, it attempts to rationalize itself in a theology or creed. The Christian gospel *was* salvation ; it *was* saving power or grace. That *was* its truth. But the philosophic mentality of the Greco-Roman world sought an

intellectual presentment of it, and proceeded to formulate its concepts, its facts, in an attempt to state the verity or truth of Christianity. Hence Christian theology and creeds.

Neither are poetry and the other arts conscious of any such distinction so long as they are poetry and art. The attempt to find and state it checks poetic or other artistic creation. This is work for the critic who is philosophizing about art and trying to place it in his categories, one of which may be truth or the self-consciousness of truth.

From the arts of expression we turn to the more useful crafts and the beginnings of science. Still knowledge for the most part is bound up with that which works and is effective. Only as curiosity stretches out and beyond the practical needs of the occasion, the distinction emerges. Now our inquirer, our scientist, wishes to know the facts, or understand the phenomena, for the sake of knowing and understanding. The effort to satisfy his curiosity frees his perceptive and co-ordinating and analytical faculties from absorption in the practical aspects of the matter : the search for truth has emerged.

Thus in science the pursuit of truth arises, and the conception of truth takes form. The conception, if not the pursuit, will reach a clearer self-defining consciousness and an exacting formulation in that still more detached and ultimate consideration which is philosophy. Here truth stands for itself, to be desired and sought. Whatever it may prove

to be, it is no longer a pragmatic element in other human functions of living in the world. And this emergence of truth in the light of thought also helps to make clear the distinctions I am making between values and validities.

But it is far from my intent to set truth separate and apart from the action of our faculties. Just as human value is a realization or function of oneself, so is validity or truth. If I think of value as the realization in my nature of that which profits me, validity seems a realization within me of that which corresponds with fact, that is, with such reality as I may apprehend. This is what I understand by truth.

But here a little more specifically as to *what* this correspondence must be *with* in order to constitute validity or truth. One kind of validity consists in a coherent correspondence with one's own mental processes ; first of all with one's logical phases. With some of us they appear as imperative. Perhaps most people offer them lip-service, pluming themselves on being reasonable people ; but usually they jump their logic in practical decisions, and act upon intuition or such impulsive and strong desires as build their own arguments.

Indeed, correspondence with desire or with impulse offers another form of validity, which has not been held in high esteem by philosophers. They know the frequent folly of it, its fatal consequences, in the lives of individuals ; and they have seen too many mad mob decisions. Recently we

have all learned much about war-psychoses or war-psychology ; and the world-wide evidence of profitless devastation comes to the support of that truest of old proverbs, *ira brevis furor est.* Yes, anger is a passing madness—if only it would pass ! It illustrates the disproportionateness of passionate acts and decisions. Under the power of passion, the mind is blinded to the relative importance and permanency of values, and fashions truth to meet desire.

Which brings us to another dilemma, another reminder that the human mind is but questionably adapted for the pursuit of truth. It is not for us to pack ourselves into the strait-jackets of our reason. Why should we hand over our passions, impulses, intuitions to such a jailor ? The best values agree with our whole nature ; and the best validities must in some way represent our whole nature's co-ordinated functioning. We cannot deny all validity to intuition and to feeling. Correspondence or coherence with these phases of ourselves has some claim to truth.

Through our senses and our perceptions we seem to apprehend an outer world, and are drawn to seek our tests of validity in some correspondence of our thoughts with its facts or with its order, the Order of Nature, as the phrase goes. Thus are we drawn to rely on our perceptions and the evidence of things, even the *évidence raisonnée* which science offers. Yet " outer " Nature casts us back upon our minds ; and the perception of it, the evidence

which it offers us, the standards which it sets, are all part of the functioning and realizations of our minds, whatever else such visible and tangible phenomena may be in themselves.

It is possible that whatever I realize as bearing in any way on *me*, or as contributing in any way to my being, my functioning, my satisfaction, or my happiness, in fine, to my self-realizing Self, must somehow be a fact and so a criterion of validity. The best value for me is that which corresponds with the co-ordinated functioning of all my faculties, which is the fullest realization of my nature. So it seems to me that validity or truth must relate itself to my continuing development as an organism functioning as a whole or at least as a confederacy of functions. In this way validity must answer the exigencies of my living in the world, and accord with the ends and objects of my life. Thus it comes to some accord with what is fact or reality for me. In order to be ultimate fact or reality, this accord must be established in the general working of my mind, all the phases or faculties of my nature which are capable of discrimination and decision. I can find no criterion more catholic or more sound and true for us. The best validity, like the best value, does not appeal merely to feeling or to intellect, but satisfies, so far as this may be possible, our whole functioning and self-realizing nature. Like value, validity must make part of the whole Self.

IV

Fields of Effort

Looking outward from myself I find the same general criteria applicable to the provinces of human effort and attainment. The values and validities of science, philosophy, religion, art, and practical affairs including what is called ethics, exist and live in man. They are expansions of his functioning, his realization, his self-realization. They and their results should be subjected to the tests applying to the case of any individual. In all provinces of human achievement, values and validities still depend on the functions, the realizations of men. But in considering the age-long efforts of humanity, the race is substituted for the individual ; and the human achievement, because of its largeness and complexity, has to be laid out in departments, interrelated and overlapping though they are. Each department represents the activity of certain faculties rather than others, contributes certain values to life, and presents corresponding phases of validity. Taken together, we may imagine them to represent the human race entire in its progressive being.

Testing values and validities in myself, I looked back to the evolution of my faculties, and found that agreement with my achieved and unified being was for me the final criterion of worth and truth. In applying a like criterion to a province of human

attainment, natural science for example, account should be taken of its agencies and methods and the result of their past and present action. But thereupon its contribution should be brought before the tribunal of other ways in which men have won through to happiness or truth. The test is found in some acclaim or disapproval on their part. One sees at once how philosophy may be called on to judge the results of science, or the working evidence of affairs be brought to bear upon the conclusions of philosophy. In later chapters I shall try to compare these conclusions with the convictions of religion and the truth which lies in the creations of poetry and the figurative arts.

History is the storehouse of experience, a manifold exemplification of the affairs and interests of men. It offers exhaustless standards of decision. It is the great source of vital criticism, a showcase of error as well as workable truth. Its marshalled experience affords a test of both values and validities, of what is good and of what is true.

The past enters genetically and as a contributing ingredient into every existing organism, and makes part of its every act, part indeed of every conceivable event or object throughout organic and inorganic nature. Yet the human organism, since it is living and progressing, is constantly emerging from its past. Though perhaps, if we extend the conception of *its* past to the past and present of its total environment, it is emergent only as the totality of things emerges in cosmic progress. Even man

cannot emerge out of the universe. The history of science or philosophy or religion is not merely the certification, or rebuttal, of its claim to offer what is of worth to men, or what is true for them. The history of each enters into its growing web, forms every part of its still living content of truth or value. For history is not merely the series of events, but the interwoven tissue of event itself, the time-element of continuity and existence, without which nothing is or can have ever been. Every object in nature, every bit of science, every philosophic theory, every phase and kind of religion, every creation of sculpture or poetry, and every constructive or destructive act of life, has or has had this constituent of existence, which is time. And the history of any subject is the subject itself in genesis, growth, and perhaps decay.[1]

In suggesting the use of standards drawn from one province of human effort as tests of values and validities in another, I did not mean that the same patterns of excellence apply in both. What is good art or religion would be bad science. Feeling and emotion contribute to religious faith and make the *élan* of its thought; they inspire and form poetry and painting. Their ways are not those of the intellect searching for scientific fact or law. One method distinguishes science, and another, art. In method as well as in results, we must sound very deeply to gain a common basis of comparison.

[1] The substance of this paragraph will be amplified in the next chapter.

Neither the value of feeling and emotion, nor the validity of their affirmations, can be measured in terms of reasoning. On the other hand, feeling is not a safe test of logical conclusions, although usually it enters into thinking.

Not in the way of such comparisons and measurements should one province of human attainment be measured or tested by another. But perhaps one might consider whether the manner and results of the functioning of our faculties in the one are incompatible with the other ; and the manner of perception or ascertainment of fact in the one might be compared with the method of the other. So far as any conclusion offered by such comparison is the outcome of feeling, it is likely to incline toward the results in which feeling enters most strongly ; but so far as it springs from reasoning, it may incline toward the results in which reason has the dominant rôle.

Such testing would seem the broadest, if not the surest, open to us. It involves consideration of an infinite complex of countering and qualifying data and relationships. Departments of effort, apparently diverse, pass into each other and may be dependent on each other for sustenance and support. And while ways and methods of advance are obviously different, they also partake of each other subtly or evidently. Perhaps none of the departments really could exist without the rest.

A cell cannot function by itself, nor an organism function without environment. There is competi-

tion and struggle, as well as mutual aid, among the parts of an organism—like the branches of a tree and the muscles of an animal. So is there among phases of the human mind or personality. This idea may be extended to the relations between an organism and its environment, which enables it to live and yet contends with it, and may destroy it.

No phase of human activity comes to pass by itself. There is little thinking without desire, without feeling ; perhaps the mind always works in its entirety. One department of human effort will scarcely progress without some activity in others. And possibly as each man has many faculties or phases which do not act in isolation, his work unavoidably attaches itself to more than one such province. The human race had to evolve all sides of its manifold accomplishment ; it could not have produced one of them alone.

CHAPTER II

VALUES AND VALIDITIES IN HISTORY

I

Rationale

Having reached a conception of values and validities, I should like to make clear, to myself at least, how they realize themselves in the long tale of human effort or functioning, which is history. The propelling power may be conceived as the central dynamic impulse of the human individual to live his life, and function to the full measure of his faculties. Such an impulse exists in all living organisms, plants as well as animals; and functions with each species in the disclosure of characteristics appropriate to the species. The scale ascends to man, in whom this inherent urge manifests itself in a rich variety of individuality, which still maintains the character of *genus homo*.

The human need to function realizes itself in the creation of values and the validities which support them. With the growth of an inquiring and analytic mind, the validity may itself become a dis-

tinct value as the pleasurable functioning of intellect in the satisfaction of curiosity. This age-long effort and realization of human faculty in values and validities appears to me the true history of mankind. Despite its multifariousness, a unity or unison is preserved through the relationship of every incident to human nature, that is, to the central need of men and women to realize themselves—to live their lives.

The manifoldness of growth and spiritual emergence making this history of mankind is a *continuum* from age to age. The historian's business is to discern and set forth this phylogeny of human thoughts and acts. His story would be most profoundly interesting if he could discover and present the vital impulse, the moving passion, intuition, thought, which is clothed or veiled in words and conduct or accomplishments. But how shall a historian see beyond these *visibilia*? He must pilot his story and interpretation by outer achievements, or their fragmentary survivals known to him. He must put these together in their right relationships, and he may seek to work back to the vital strength and passionate thought of which they are finished forms. Yet still I fear that he can render but a series of appearances.

Perhaps the manner of this *continuum*, as it appears to us, may be suggested through the two meanings of the term " history ". In the first place, history means the thing itself, the many-sided course of events ; or rather, from my point of view, and so far as we can see into the process, it means the

making of values and validities through the functioning of human faculties. Since I am speaking as a humanist and not as a physicist or biologist, I am not regarding the world and its events in themselves, apart from men ; but am considering solely the values created and the validities established by human faculties functioning with respect to its phenomena.

In its other obvious sense, history is a telling or narration or description. The teller or writer may be an eye-witness or someone writing centuries after. In either case his own faculties and temperament function in the narrative. He will express himself through his account and interpretation of events, as well as in his opinions.

In both senses of its twofold meaning history represents an evolving sequence, possibly an organic whole. Each cross-section of the time-event, each phase in the creation of values and validities, is the offspring of the past which cradles it. Yet each period is putting together in some new pattern the store which is handed down. It is emergent, constructing or creating for itself. And every historian is part of his own epoch and therefore a child of the past which cradled both the epoch and himself ; and with his epoch he is also emerging from the cradle. His mind, his faculties are part of the faculties and the evolving values and validities of his time. What he writes is part of the whole, and in some way the offspring of the past which he describes.

There is a past which is the immediate cradle of a given period, and a past holding the remoter store of influences that may be drawn upon. The distinction is clear enough sometimes; for instance, in the mediaeval centuries and the time following, miscalled the Renaissance. The advance of each mediaeval century from its immediate past consisted largely in drawing upon the unused material of Greece and Rome. The twelfth century drew more copiously and intelligently from that greater past than the eleventh had done, and the thirteenth drew still more. Very intensely the fifteenth and sixteenth centuries strove to enhance their life through still larger and purer draughts from the classic wells.

No period can embrace the whole contents of the past. No mediaeval century could, nor any century of the " Renaissance ". Nor did any period of Greece possess the entire spiritual content of prior Hellenic growth. Each period takes what it is capable of assimilating. According to its own nature and faculties it will draw upon the past, just as it will create through them. If the period be a time of strong advance, it will use the best of its immediate antecedents. But it will draw from the remoter past according to its own taste and temper and capacities, and its relationship of superiority or inferiority to whatever portion of the past it is using. For its superiority or the reverse may relate to some special field or faculty, rather than to the sum total of quality or attainment. No man excels in all

things, neither does any period. But usually an advancing time will assimilate the best from the past, and a time of retrogression the cruder and less intelligent elements. Isidore of Seville, for example, in the seventh century draws from Augustine (who belonged to a better intellectual epoch) the great saint's most foolish lucubrations.[1] The centuries following Justinian's time, in Italy and the West, were too barbarous to use the body of law set forth in the great *Digest*, or even the collection of statutes or *Constitutiones* in the *Codex*. Instead, ever baser epitomes were produced and used.[2]

And, again, all this applies to history in both senses of the word. Each writer shares his own period's ways of understanding or drawing from the past. He stresses what he grasps, and puts himself into his narrative. Yet any time-event took place or existed as a something which it was ; and one narrative may be closer to it than another.

But here one recalls the appalling diversity of the conception of *fact*—the many guises, forms, significations, even essential actualities, it may assume. " Fact " may be taken as the phenomenon observed, or, again, as the deeper principle set under for a basis of what is seen and handled. It may be the water of Thales, the ideas of Plato, the four causes of Aristotle, or Spinoza's God. For a religious, mystic age, impatient of sense-evidence,

[1] See *The Mediaeval Mind*, i. p. 105.

[2] *The Mediaeval Mind*, ii. pp. 268 *sqq.*, sketches this complex story.

the deeper verity of fact may lie in the spiritual or allegorical meaning of the visible phenomenon.

Moreover, the causative and enveloping psychic situation is part of what one is pleased to dub a historical fact, like the assassination of Julius Caesar. Is not its social and political effect part of it too? Diversity of significance is not limited to the personal equation of the historian; it enters and makes part of the fact itself. Caesar's death was a different fact to each of those Roman notables whose swords met in his body—differently intended and with different results. How can anything be in and of itself alone? Every fact comes to pass in its relationships and bearings, as well as in itself, if indeed there be any clearly limited "itself".

> What is your substance, whereof are you made,
> That millions of strange shadows on you tend?

The causes of Caesar's death had worked up to it through the whole antecedent history of Rome, of mankind, if one will. More immediately it came about through the tempers and motives of the conspirators. Neither its causes, its significance, or its effects could be the same for an ethical intellectual like Brutus and the sweaty mob about to take the air in Caesar's gardens beyond the Tiber.

I have been speaking of periods in rather a narrow and mechanical way, as "centuries" or cross-sections of the time-event. There is a larger and pregnant conception, though one fraught with all the dangers of preconception and over-emphasis

—I refer to what seem distinct phases of mankind's growth. But since it may be doubted whether all times and races of men constitute a " mankind ", I will put the matter differently. Without raising the question of racehood or its singleness or purity, one may speak of different peoples who have (possibly through their salient individuals) exhibited exceptional faculties. The productions or achievements of one people have differed on the whole, and indeed as a whole, from those of another, and have to a more or less visible degree shown a pervading harmony, or at least a common quality. The Indian characteristics and environment, and the resulting creation of Indian values and validities, differed generically from those of the Greeks—at least until the Greeks became unprovincialized and modified and indistinct through the mingling of Mediterranean peoples and influences in the late pre-Christian times and the first centuries A.D. Certainly there have been periods when the dwellers in one country differed from their neighbours more than in other times. One may go so far as to speak of a racial or territorial complex of thought and feeling, and the resulting expression in values and validities, as Indian culture, or Egyptian or Greek.

One may go even further and affirm that the achievement of the Greeks, Indians, or Egyptians makes an organic whole, with a beginning (though here we shall be always hazy) and a time of flowering and bearing fruit. Then may come a time when the distinctive features of such fruitage seem to dis-

integrate or decay or lose themselves amid other and seemingly alien influences. It may seem, and it may be a fact, that the energy of the particular race or people or civilization is lessened or exhausted.

The Greeks are the stock illustration. It would be hard to show them a pure race ; they may have been of motley blood. But all branches of the Hellenic people possessed a language and much else in common ; and the Greeks are rightly credited with a distinct and marked and most illustrious achievement. Their time of fruitage was comparatively brief, however immortal their influence ; and, while their beginnings may have been conglomerate and certainly are hazy, the Greeks reached their zenith of accomplishment in some half-dozen centuries, and then seemed to decline in energy and to lose their notable traits. They are the most striking example of the beginning, the culmination and the decline of a distinct and apparently racial complex of energy and faculty. Yet one should be cautious in drawing from their example any general principle to apply to other peoples who have not exhibited phenomena of culmination and decline in any such striking (perhaps deceiving !) way. Most of us are confident, however, that certain qualities are stamped upon the creations of what we call the Greek genius.

It is also evident that, taken tentatively and somewhat gingerly as wholes, these large and efficient complexes of energy and faculty may be saliently emergent from other complexes of influence and

accomplishment, which may have preceded or may contemporaneously surround them. So it was with the Greeks at all events. And the Indian or the Chinese or the Egyptian culture is quite as markedly peculiar as the Greek, although we may be dubious as to the antecedents from which the Indian, Chinese, and Egyptian cultures are imagined to have emerged.

I seem so far to have been thinking of these emergent complexes of culture as somehow racial—at least they have been given racial names. But distinct qualities may mark the culture of a period, say a succession of centuries, and prevail among a number of peoples of indeterminate racial affinities ; and the distinguishing qualities of this pervading culture and view of life may to a large extent represent reactions of so-called native faculties under the impact of dominant yet (originally, at least) alien influences.

Of course I have here in mind the European Middle Ages, to use the accepted, though perhaps indefensible, term. Among the somewhat heterogeneous peoples of the countries now known as Spain, Italy, France, England, and Germany, there was for centuries a fund of common knowledge and a pervasive view of life. And what I have elsewhere, in two large volumes, expounded as *The Mediaeval Mind*, became itself through the reaction of native tempers and faculties toward Christianity and the Greco-Latin culture. The complex of thought and feeling which grew and expressed itself

in creating values and validities was extremely different from the culture or spirit of Greece and Rome. Yet the mediaeval culture drew largely upon the antique, of course transforming to its own needs, capacities, and temperament whatever it drew or thought it drew ; and the mediaeval creations were utterly different from the antique, however much they conceived themselves to have followed or borrowed from them.

One is led on to remark, and very much in the latest spirit of our own time, that values and validities are made and unmade from age to age ; and that those created by any given race or people or distinctive period are its values and validities and represent worth and truth for that time or race. They may not hold for another time, although the later period may use and emerge from them, possibly even by using them. And withal I do not think that the fact of this change of values and validities, or even their discarding, precludes altogether the possibility of a more enduring growth of worth and truth from age to age.

II

Illustrations

Man creates his values and is the maker of his truth. Curious and contradictory are the values and the truths he has evolved. The values and validities of magic or religion belonging to one age are the laughter of another—a laughter even to

some men of the time which cherishes them. One people follows the ethics of asceticism, another the ethics of the obvious gifts of life. The divine right of kings is folly to a democracy. Most of us are the fools of the positions we have taken ; or we think that what conduces to our security represents positive righteousness for all. Our opinions spring from our wishes. We measure the weal or woe of universal life by our own happiness or depression.

Men will never outgrow folly. Beastly are their crimes, if not their natures. Yet I cannot survey the tale of history, with prehistory for prolegomena, without a conviction of human advance—only one must not think in decades or centuries, but in millennia or aeons.

Early in the game, the functioning of quasi-human faculty might attain a realization in the values of family and tribal living. Validities corresponded with current exigencies. Aristotle says that when driving needs were satisfied men desired to know. But nowadays we find no clear beginning for any of the qualities of men or the values which they create. Religion was always there, a protection against fear, an aid as well. When did not men have some sense of form and comeliness ? And who shall point to a time when curiosity might not arise independently of other need?

Need is a matter of desire. To eat and procreate may be fundamental. But the wish for an apt form of cooking-pot or paddle also expresses a human need and function. The gratification of curiosity

is a value in itself. Desirès are faculties. They were always part of the interacting functioning of the human animal. But I leave these inchoate stages in order to draw from the later tale of man a few readily recognizable illustrations of definite contributions to values and validities.

Confucius and Confucianism, as the soul of ancient China, illustrate our principle of continuity. The Master was cradled in the somewhat distraught China of his birth. That was the pit from which he was digged. But his reverent and idealizing mind went reaching back of more immediate shortcomings and disorders to the traditionary virtues of the ancient Kingdom. He would be a transmitter of those virtues, together with the wisdom of which they were the exemplification. In truth he was such a transmitter, an assembler, an arranger and orderer, while he added thriftily to his heritage from his own experience and discernment.

The values which he sought to bring within universal principles were ethical, social, political—all in one. " What Heaven has conferred is called the Nature ; an accordance with this Nature is called the Path ; the regulation of the Path is called instruction."

" While there are no stirrings of pleasure, anger, sorrow, or joy, the mind may be said to be in a state of Equilibrium. When those feelings have been stirred, and they act in their due degree, there ensues what may be called the state of Harmony.

This Equilibrium is the great root, and this Harmony is the universal Path."

"Let the states of Equilibrium and Harmony exist in perfection, and a happy order will prevail. . . ."

This is the outline of Confucian value and validity. It is to be completed with precepts of political and social wisdom, which ensure the tranquillity of the state and realize themselves in the definite values of reverent ties between ruler and people, father and son, husband and wife, elder brother and younger, friend and friend. Further values lay in the prescribed ceremonies controlling social intercourse, marriage, burial, ancestor worship, and the propitiation of spirits. Ceremonies and rules of propriety reflect the graded distinctions holding between Heaven and earth. Their reverent observance will mould the character aright. The finish comes from Music, which presents the harmony existing between Heaven and earth.

Music and ceremonies, supplementing each other, are expressions of a character rightly ordered in harmony with the Way of Heaven, which blesses the good and makes the bad miserable. Thus the values and validities of the Confucian scheme are bound together.

Wherever the Chinese came from, or however they were assembled, Confucianism appears among them as an indigenous growth. Nor can any outer influence be traced in the contemporary Taoism, which presented values evolved by the more inert

and contemplative phases of the Chinese mind. But later, in the first centuries of our era, Buddhism came from India, and its scheme of values and validities found acceptance throughout China.

One may say that India set its values and grouped the supporting validities within two schemes of undisturbed intellectual peace. Both schemes were related to the Indian denunciation of the pleasures and pains held in the round of impermanence and recurrent death constituting individual life. The values in Brahmanism and Buddhism seem to us much the same, although supported by contrary validities. For the Brahman-Atman doctrines of the Upanishads and the teachings of Gotama, who revolted from them, present opposite poles of metaphysical and psychological conviction.

The Brahman pole points to the Absolute All-one, empirically unknowable, but felt religiously and demonstrated with consummate dialectic. It was to be cherished as a religious goal and patterned upon as a norm of conduct. Buddhism rejected this Absolute. Yet Gotama urged emancipation from the lures of life as unflinchingly as if beyond them there was an Absolute instead of a sophisticated Nought. The Absolute of the Upanishads differed only metaphysically from Nirvana. Brahman and Buddhist were alike distressed by life's cajoleries. Intellectually they despised whatever had no share in the steadfastness of the conceptions of the mind. Both systems taught the emancipation that comes

with detachment and freedom from desire. The Indian condemnation of life's round was the child of mood as well as thought, and mood and thought united in creating the Indian spiritual liberation.

Life is suffering ; release is salvation. Brahmanism set the method of this release in a dialectic leading on to an identification of the Self with a changeless and unsuffering Absolute. For the desireless sage there was no consciousness after death. Gotama formed a self-less scheme of causation and dependence : from uninstructed consciousness and thirst and clinging issue rebirth and pain and grief and recurrent death. Its argument is difficult for us, though the psychological analysis is strangely modern. His method of release lay in right belief, speech, act, and thought. He put it in the form of the " Four Noble Truths " of suffering and its origin, and the way leading to its cessation through the destruction of desire. The dynamic principle (already active in Brahmanism) was Karma, the enduring " power of the act ", whether mental or actualized in deeds. Karma winds through all conscious or sentient life, from the insect to the perfected disciple about to attain Nirvana. It is the origin and continuing cause of individuality and its craving to realize itself.

Gotama's value was release from sentient and individual life ; his validity was the finely constructed method by which release so surely was achieved. This scheme of value and validity is alien to the Western mind and temper. Less

exclusively Indian is Karma, which in some guise is accepted among all peoples. Although the Indian carrying out of Karma through the transmigration of souls, or of " name and form " as Gotama put it, has met with small serious acceptance in the West, the West knows well the power of the act and its entailments. The Greeks called it Fate. And here I turn from the Indian placing of value and validity in the renunciation of individual and sentient life to the Hellenic ideal of its full acceptance and enhancing.

The progress of the Greek genius in its creation of values and establishment of validities was an organic *continuum*—a constant using of the past, a taking up of its contents into the swiftly moving and emerging present.

In the Epics values are shown through the heroic consciousness and actualization of the greatness of man and the grievous shortness of his life. The hero's act is as a flash from his character. He *feels* his values and validities, though he may prove them rationally. The acts of Achilles present greatness and resolve ; his fate displays the grief and shortness of mortal life ; his words set forth the argument. The heroic temper is also the basis of Odysseus's sense of values ; but with him there is longer and more experienced consideration.

So epic values are the intuitive creatures of character. They are the qualities of heroic manhood and womanhood—valour, steadfastness, resource, right judgement, beauty of form, fitness of

conduct. The thought of beauty passes over to the qualities of character and mind. All excellence is admirable ; like greatness, beauty justifies. Helen and Achilles are their own excuse for being what they are and doing what they do. They will be a theme of song, a joy to men, an uplifting of thought, in times to come. Song carries knowledge ; curiosity belongs to mortals—the pleasure of satisfying it is clear in the *Odyssey*.

Epic validities correspond—the conviction of human greatness and mortality. From a man's qualities, from his mortality and the probabilities inhering in his character and circumstances, ethical convictions arise and thoughts of fate, none too fixed and steady.

The scheme clears up, and fate itself becomes ethical, in the lyric and dramatic poets. Measure, temperance, conduct fitting one's nature are leading concepts. With Pindar the supreme values are not set in permanence. The perfect deed, the high mood, transcend their own brevity, which they leave to fame to perpetuate. The dramas of Aeschylus present the danger of great prosperity, lest it beget insolence and crime and ruin. The gods will cast down the sinner and his overweening children ; but suffering brings wisdom to those who act aright. Sophocles sets a halo of calm on the blind Oedipus, and Antigone accepts death in requital for doing what it was fitting and beautiful for her to do.

Many scenes of the older Greek poetry were such

as to wring the heart. But the stress was on greatness of character and conduct. Only from Euripides onward does pathos as an artistic value, a theme of poetry and art, come clearly to its own. The Alexandrian poetry of sex-love consciously expressed emotional and pathetic values. Following in his larger course, Virgil ennobles and beautifies all life in its appeal to our sense of tears—*manibus date lilia plenis*. Nature gave us tears, and bade us weep at human sorrow, says Juvenal, explicitly recognizing the value of pathos in literature as in life.

The values and validities realized in Greek poetry were not misprized by the philosophers for whom the crown of human well-being was the aspiration to know and understand. To know is a human function, and knowledge was made by them into a supreme value, and yet was not to be taken and appraised apart from the rest of life. Plato, whose manifold nature was at one in its harmonious functioning, symbolizes the Greek love of wisdom. This lover of mortal beauty rises through the importunities of sense to the beauty and other goods of the soul. Thinking was his play and joy. The functioning of his intellectual energies was his strongest need. It created his chief values and established his validities. His validities lay in the conviction of the reality of mind and the assurance of the truth of concepts mentally visualized and dialectically tested. Such concepts were also the desires of his soul; he seeks to realize them as

values—beauty, justice, goodness, every virtue in its perfect conception.

More analytically Aristotle builds broad the base of human well-being in all the activities of man, then slopes the structure upward and inward toward knowledge of true being, which is the final human value and holds the final truth. The value and validity of observed and experimental knowledge of the natural world entered his scheme, perhaps more explicitly than with Plato. But many other Greeks had found value—taken pleasure—in observation and experiment and had recognized the validity of this mode of ascertaining fact.

The coming of Christianity illustrates the manifold *continuum* inherent in the progression of the human spirit. An untold complex of antecedents mingled in the world of Greco-Roman humanity through the centuries surrounding the Christian era. No part of this complex but had its share in calling forth the needs and aptitudes of the period. I tried to sketch this spiritual interweave in a chapter called " Intermediaries " of my little book first named *Deliverance*, and then, less aptly, *Prophets, Poets, and Philosophers of the Ancient World.* A few words will answer here.

Political and social factors had finally brought the eastern and western Mediterranean countries under one rule. A cosmopolitan spirit was abroad ; religions and ways of thought formerly diverse were mingling. The originative vigour of philosophic and scientific thinking was on the wane. In

Stoicism and Epicureanism Greek curiosity sank to a search for a rational refuge from anxieties and griefs. It was found in a controlled temper and a self-directing will benevolently attuned toward fellow-men. Such rational practice of virtue was the Stoic value and validity.

In the second century A.D. Plotinus gave form to the yearning for spiritual emancipation rife in the intellectual world. His system absorbed much antecedent Greek philosophy, and so used it as to evince a true Hellenic *continuum*. Yet Neo-platonism was pointed toward a goal of rapt deliverance, and placed its supreme value in an ecstatic union with an Absolute Spiritual One. Its validity lay in the dialectic argument which led up to this final super-rational leap.[1]

The fringes of Neo-platonism interlaced with the emotional and rather Asiatic cults sweeping from East to West. One will hesitate to place among them the religion of the Jews with its record of austere cruelty and love. Emerging from the tribal narrowness of the ancient faith, Israel's prophets had set forth the utter values and validities of the universal and righteous lordship of Jehovah, before whom His servants the prophets bowed in devoted obedience. The words of prophet and psalmist have compelled men's imaginations and given voice to religious hope and anguish for two thousand years. They made the atmosphere in which Jesus lived and found His being.

[1] I restate these matters, from a different angle, in Chap. V. III.

Jehovah's love of Israel, transformed to a Father's love of all His creatures ; man's love of God and fellow-man ; faith to the death in God's love and its sure salvation unto eternal life—made the core of Jesus's Gospel. Salvation was at once its value and assured validity. The life and teaching of Jesus Christ set forth this gospel, and taught and exemplified a daily righteousness freed from the taboos of Judaism. Love, sympathy, pity for human sorrow flowed from the Saviour. It was left for Paul the Pharisee to work out by tortuous yet triumphant argument the Christian's saving righteousness through faith, discharged from the burdens of the law.

Stoicism set forth an ethical refuge ; the Gospel offered Salvation and Neo-platonism deliverance ; poetry had won the gift of tears, and even sculpture told of human yearning. In these emotional centuries the *intelligentsia* of the Greco-Roman world turned from philosophy, and still more utterly from natural science, to religion. Interest in irrelevant knowledge dwindled, as thoughts of refuge, then of deliverance, and finally of salvation, captured men's minds. Natural Science ceased to advance, and began to lose what knowledge had been won ; while philosophy, by which I mean ultimate rational consideration, applied itself to the period's dominant interest and insistencies of mood.[1]

The different fortunes of science and philosophy may readily be understood. Men whose minds were fixed upon some form of deliverance from the evil of

[1] Cf. *post*, Chapter V. III.

the world, or upon eternal life, would not occupy themselves with the investigation of natural facts. But their intellects sought employment. The Neoplatonic scheme of deliverance used a method of strenuous thinking ; and as intellectual men were drawn to the Christian Gospel of salvation, they likewise set themselves to reflect upon this great and absorbing matter. Greek rational faculties were still insistent, and were endeavouring to comprehend the Faith. There ensued a rationalizing consideration of its contents. Through the effort to fit the Faith to the ways of their habitual reasoning, the leaders of this Christian philosophizing movement made up formulas suited to the tests of dialectic. They constructed a rational scheme of Christian validity. The Faith was thus transformed to creed and dogma. Its values—the saving power, the devoted life, the love of God—were preserved in a changed form. The result was presented as an explicit statement of the Gospel. Yet it was a change from a faith to a theology. In the place of the assurances of intuition, the discursive reason had set another order of validities. But the men who did it were not conscious of the change, and thought they were expressing the true understanding of the Faith. Certainly they put love and wrath as well as intellect into creed and dogma, and the Gospel's moving power was not lost. Indeed, if we look forward a thousand years, through the Middle Ages, we find nothing more wonderful than the growth of Christian emotion paralleling the scholastic system-

atizing of Christian dogma, which to us seems a process of theology.

The Church Fathers, meaning the Christian leaders from the third to the seventh century, accomplished great things. While holding fast the moving power of the Gospel, they created a theology; they perfected the organization of a Christian state, to wit, the Church ; they ordered the Christian life and established monasticism as its highest form. Thus they modified the stress of Gospel values, and added new ones.

Using all that the Fathers had accomplished, the mediaeval Scholastics, culminating in Aquinas, constructed a more finished and more inclusive system. The Fathers belong to the last stages of Greek philosophy. The Scholastics are different men. An intervening growth of mediaeval humanity made them what they were ; they were of it as a final form. While influenced by Neo-platonism, the Aristotelean encyclopaedia had been lately opened to their view, with its massed contents and teaching of the self-sustained value and validity of knowledge. It was buried beneath the waters of neglect when the Church Fathers lived. The thirteenth-century Scholastics sought to make it their own and incorporate it in their *Summa* of the Christian scheme of life and salvation.

The Scholastics were philosophers, inasmuch as they were applying methods of ultimate rational consideration to the profoundest preoccupations of their minds. The newly translated tomes of Aristotle

were to be used as handmaids to the queen theology. Those tomes indeed set forth the love of wisdom for its own sake, and gave the results of observations. But the demands of theology and salvation were too tremendous to permit the pursuit of irrelevant knowledge. As for the creatures of the outer world, animals and rocks and mountains, the Scholastics had long found their deepest truth to lie in their allegorical and, as it were, *saving* significance. Training as well as intellectual and religious obsessions kept the Scholastics from turning to the direct investigation of Nature in the free spirit of Greek science. Amplified, but still essentially the same, their scheme of values and validities was the scheme of the Church Fathers.

Yet a change was not far off. As the coming of Christianity " in the fullness of time " illustrates the *continuum* of life, so in a different fullness of time, from the fifteenth century onwards, the interests of the mind set in a new direction. Horizons were enlarging rapidly, and men's curiosity about themselves and the world around them reached livelier expression. Scientific interest became more common, and the desire to investigate phenomena directly and with experiments. Men would not be content to pore over ancient authoritative tomes. Revolt from authority pushes men to investigate for themselves ; or the two impulses concur, and together represent a stage of experience and growth which brings at the same time revolt as well as the freed search for fact.

I shall refer in Chapter IV. to some incidents of this scientific revival, from which many incline to date our modern era. It was a recapturing of intellectual values and a re-establishment of validities, which had had but furtive share in the spiritual life either of the patristic period or the Middle Ages. Yet I think it can be shown as a true *continuum*—which does not imply either an unchanged or a stationary state. Every period differs from the one before it, and produces something from itself, besides using or rejecting what has come down. And in itself no time is altogether homogeneous. There are always many men of many minds.

The sixteenth and following centuries show a goodly variety of incongruous interests. Theological discussions continued, and took on a political and military character through the Reformation and the ensuing wars of religion. But another phase of growth shows in the effective desire to realize values and find validities based on no authority sacred or profane and having no part in theology or salvation. Moreover, these validities, in deriving their assurance from observation and experiment, separated themselves and their methods from the ways of that ultimate consideration which is philosophy. There was no such intention in Aristotle, whose many-sided achievements exemplify the parting of the ways of science and philosophy ; but the Hippocratic doctors spoke sharply enough. At all events, the new physical science, as it became conscious of its end and scope with Galileo and

Newton, disclaimed the search for ultimate reality and truth, which they took to be the domain of philosophy and theology.[1]

But our *continuum* needs to be set in broader generalities. The fifteenth and sixteenth centuries show an increase of wealth and luxury, moderate enough in modern eyes. Clever people, less simple-minded than their forbears, were becoming men of the world. Vanity deepened ; society grew magnificent ; the palaces of princes became splendid with furnishings and decoration. Sharper notice was taken of all things visible and tangible, for instance of the pushing and thronging of men and women. Giotto discards hieratic patterns and tries for naturalness of pose and grouping. Masaccio and Leonardo will achieve a more finished likeness to actuality.

Our *continuum* is also to be sought along the ways of natural reaction. People are apt to tire, and some men of these times tired vociferously, of the pabulum proffered them. Petrarch anathematizes both the over-glossed Civil Law and the pyramiding of scholastic argumentation. He turned to the humane and elegant classics, hundreds following his example.

Men of ingenious hand and brain were drawn to observe the ways of things and the mechanism of the world. There had been such in the Middle Ages—Roger Bacon, Peter of Maharncuria, Albert of Saxonia. Of like temper was Leonardo, who

[1] *Post*, Chapters III. and IV.

cared neither for classics nor philosophy, but was intrigued by the shapes and colours of things, by their structure and manner of acting. He found his intellectual values in observing and painting their appearances, in studying their mechanisms, and in searching for Nature's moving forces and subtle *ragioni*. For validities, he put his trust in observation, experiment, and mathematics.

In the next chapter but one I shall have occasion to mention Vesalius and Copernicus, who were impelled to their great tasks by vehement refusal of what was offered them, and made their own values and validities through experiment and observation. Thus the sciences revived with the revolt from authority and the need to use one's own hands and eyes and mind. The desire to study Nature terrestrial and celestial, animate and inanimate, seized many a man in Italy and the North. The prodigious innings of science was under way.

I close my examples of the functioning of human faculties in the creation of values and validities. The story is beyond me—huge, multifarious, encyclopaedic. Into what province, what small corner of life, does it not wind its way? Where have men not found or created worth and truth—in solitude, in the family, in social life, business, politics, war, religion, science, philosophy, and through the great arts of self-expression. Every imaginable part of life may be a sphere of vital endeavour and functioning of faculty in the creation of human values and validities.

CHAPTER III

CLEAVAGE BETWEEN SCIENCE AND PHILOSOPHY

EVERYONE is distracted by divers impulses and led by various motives—not in one direction. Passions push us here and there. Selfish interests check social aims. The intellectual impulse to clarify, to state, to know, may be embarrassed. Yearning for beauty, love of art, desire for self-expression may war against austere analysis. But the mind still craves to order its experiences, and know by the ways of science and philosophy. Well for the Goethe-soul whose loves and faculties work together for the wholeness and power of life.

Even within the intellectual field the mind draws toward different satisfactions. Some of us intellectuals are prone to introspection, and happy in the reasonings which seem to pass within the mind. Others delight in their experience and assembling of outer facts. They will be observers, experimenters, followers of natural science. A few would be both scientists and philosophers. Drawn to a study of apparent fact, they are even more concerned with

ultimate consideration and the logic of their minds. They may seek to bring their loves together, and unite the imperatives of reason with the data of perception. They will compare and test the one with the other.

As for myself, I am more of a thinker than an observer. Yet of late years I have been intrigued by science. I think constantly of scientific validities and the connection between science and philosophy. They are both of the intellect, but represent different interests and processes. Science responds to intellectual curiosity ; philosophy to the intellectual desire to think things out.

The needs and impulses of the body and the interacting psyche make up the lives of beasts, and continue basic and pervasive in human beings. The non-reasoning fundamentals of animal life stimulate and energize our perceptions, and start processes of thought. Notions of easement, suggestions of utility, follow. The thought arises as part of its occasion ; the two are in and of each other.

Need for action impresses purposefulness on the mental processes which it calls forth ; and purpose may continue to direct and even fashion the ensuing train of thought. For the occasion may demand prolonged and constructive thinking. But having once been set going, the train of thought may continue on under its own impetus or interest, loosened or detached from the need or other occasion that had started it and had impressed it with a purpose, which later may be forgotten or laid aside.

Usually a practical origin may be assumed for the experience which we call thinking. Yet apparently a train of thought may start quite independently from sheer curiosity. It may continue co-ordinating its perceptions and reconsidering them, and, whether starting from some practical occasion or from curiosity, it may arrive at the notion of validity or truth, as I tried to show in my first chapter.

The question now is as to the manner of the thinking and the method it will follow. Let us assume either that the train of thought started in pure curiosity or, if there was an initial practical occasion for it, that such has passed from the thinker's mind. The train of thought will now shape itself to the intellectual end of knowing, and its method will be affected by the character of the object of its inquiry. Examples, soon to be given, will make clear that different objects call for different methods of investigation. While the mind continues occupied and interested in its perception of phenomena and the description and ordering of them, the mental process may be called scientific. But a train of thought may detach itself from the perception and direct consideration of phenomena, and attempt a more ultimate appraisal of them and a criticism of the validity of its own perceptions. It may turn to a consideration of its own processes, its own needs and insistences. Thereupon it will follow the lead of its own dialectic, and may become more abstract. With a sharpened consciousness of

validity as different from utility, it turns upon itself to search for standards of truth. Thus it becomes philosophic.

So one sees the parting of the ways. Science, having often had its inception in the practical exigency, is more apt to remain conscious of it. It continues engaged with the direct perception, description, and ordering of phenomena. At a stage further removed from any practical incentive, the mind concerns itself with the general interrelations of the objects perceived. Curiosity as to the world reaches out beyond direct perceptions as well as beyond practical needs. The intellect will busy itself in ordering and rationalizing the data. And thereupon, even in weighing their significance and relationships, it may detach itself from the immediate insistency of things and invent hypotheses to account for them. Through such hypotheses it constructs an order of the world conforming to its own demands. This will involve a comparison of its immediate perception of things with its inner ordering and transformation of the world to an object of consistent thought. The mind is already looking within rather than without. Soon it will reflect upon its various processes of apprehension and determination. It has entered on the path of philosophy.

No group of savages, or even animals, is without some knowledge or notion of the way things happen in the wild world about them. Especially they know

what brings pain or comfort to their bodies. Natural knowledge springs from the impinging of outer fact upon the retina of the savage mind. Each new experience is constrained by the mind's previous store, which constitutes the savage scheme of things. This scheme (like our own view of the world) is at once dynamic and impressionable ; it fashions new impressions to its own persuasions and is in turn affected by them. In alert communities there will be exceptionally inquisitive or critical individuals, who find that the common stock of ideas fails to correspond with their own perceptions and understanding of nature. Such observe and consider for themselves.

It accords with my own prejudices to conceive the proper beginnings of science to lie in the perceptions of exceptional individuals. Rudimentary increments of skill and knowledge extend back indefinitely. But as a starting-point for what we call science, I am inclined to look to some society living under stimulating conditions, and equipped with such stirrings of intelligence that individuals arise gifted with luminous curiosity. We may imagine these seeking to clarify their ideas and extend their knowledge of the natural world. They desire to bring some order into their outlook upon fact ; to introduce connection into things about them ; and even to discover some universal ground or cause of the world of manifold phenomena. Their impulse to understand and explain is a motive in itself, and need not spring from the practical needs

of daily life. When a larger order of knowledge is thus sought, science may be said to begin.

Of course, I have in mind the early sea towns of the Ionian Greeks. Within their walls in the seventh century before our era there was much curiosity, and men's minds might turn to θεωρίη, φιλοσοφίη, and ἱστορίη, the observation of nature, speculation, and the human story. Science as well as philosophy opens for us with Thales of Miletus, and others coming quickly after him. Doubtless there were stirrings in previous Ionian generations ; but the record fails.

One may prefer to find an earlier beginning elsewhere. Long before Thales saw the day, Egypt and Babylonia had built up impressive civilizations. Much knowledge was utilized, some of which the Greeks did not possess. Yet there seems lacking the buoyant intellectual motive which was to be the happy leaven in the story of the Greeks. Nor had either the Babylonians or the Egyptians the clear Greek reason and rationalizing imagination. India had the gift of reason, but Indian reason turned inward upon the thinker's thoughts. His eyes were not set searchingly upon the world of changing things, which his temperament and reason found distasteful. One may look to India for religion and philosophy, but not fruitfully for natural science.

Thales, Anaximander, Anaximenes have come down to us as philosophers. Prominent in the affairs of their city, observers of the phenomena of the earth

and heavens, at once curious and speculative, they were assuredly natural philosophers. Thinking in the grand manner, they made mammoth conjectures as to the origin of things, the source or material cause of the world. Thales, physicist, astronomer, geometrician, held that the first matter of the world was water. Anaximander, his hearer, held that it was the moist and heavy air, and that man was something like a fish in the beginning. Anaximenes, notable also as a geographer, had pregnant conceptions of world-formation through rarefaction and condensation.

One may assume that these men were investigators of nature. But the cosmical theories, which have clung as tags to their fame, went beyond their observations. In this respect they were theorizers. Their grand conclusions were due to the compulsions of their intellectual natures. So they philosophized about the physical world, and properly are called physical philosophers. And philosophers we must call Heracleitus, Parmenides, and Democritus, who, coming after the Ionians, were pushed on to further speculation by the ineptitudes of the early theories and their own philosophizing.

Undoubtedly Heracleitus had turned over many contradictions in his mind, and had done much shaping and reshaping of his thoughts, before reaching the conclusion that everything implies its opposite, and all things change into each other. Parmenides, reasoning from different premises, came to the opposite conclusion, that there is no change

or flux, but the whole world is a moveless corporeal plenum. Such a conclusion could not have sprung from observation, but must have been due to some sovereign necessity of thought. With him, only that which he could think, could be ; and he could conceive only of one eternal changeless substance.

Through whatever consideration, or inference from observation, came the atomic theory of Democritus, it was an escape from the inadmissible idea of a solid moveless world. Motion had to be admitted to one's rational conception of a world where motion was not only the most universal fact of observation, but was for most men a necessary postulate of any explanation of how the world came to be. The atoms of Democritus were as indestructible as the moveless *being* of Parmenides. But they were infinite in number and of every shape ; separated by narrow fissures of space, their ceaseless falling motion produced the visible world.

Here was philosophy or metaphysics in so far as these atoms responded to the logical demands of thought set upon solving the prior dilemmas of the reasoning mind. But who can say what scientific inferences from observation contributed to the conclusions of this great humanist and natural philosopher, of whom Aristotle said that no one before him had so profoundly considered growth and change ? Perhaps this ancient atomic theory, like its modern daughter, or indeed like any theory touching the constituents of nature, represents recourse to both philosophy and science.

The two are not hostile. One task of philosophy has been to justify the scientific apprehension of the world. And the direct scientific investigation of the world is sensitive to the criticisms of philosophy, and desires the assurance which can be found only in the ultimate reasonings of the mind.[1]

It was not a sense of any hostility between science and philosophy that drew them apart, but rather the necessities of their several methods and subjects. Pursued by the same votaries in old Ionia, the methods or processes of the two at first did not know themselves distinct. Specializing of intellectual effort came reluctantly with the Greeks, whose ideals sought the fulfilment of the whole man. What one must call science as well as philosophy was still cultivated by the same individuals in the generations following the Ionians. But the inherent difference of method between science and philosophy led on to a practical severance of intellectual aim, or accompanied it stage by stage. The indomitable human curiosity occupied with the direct investigation of natural phenomena would be hampered by the pull of theories as to the constitution of the world which had sprung from sheer rational or metaphysical consideration. The spirit of direct investigation could not accommodate its operation, or conform its conclusions, to the dictates of metaphysics.

Because of our fragmentary knowledge of early Greek philosophy, we first see the parting of the ways in Aristotle, who was supremely great in both

[1] See the next two chapters.

science and philosophy. Just because his mind comprehended all provinces of mental effort, he endeavoured to classify them and to distinguish their objects or aims. The intellectual past which made the equipment of this prodigious student and thinker held natural science as well as metaphysics; also mathematics, which was a *tertium quid*. There was no incompatibility in their pursuit. The human mind might profitably embrace them all. But a difference in the nature of the subject of inquiry would call for a difference in method. One could not investigate the courses of the stars, or reason upon the ultimate causes of the world, in the same way that one could study the parts of living animals, which could be examined and their functions discerned. Treading probably in the steps of his predecessors in zoology, Aristotle in his study of animals pursued methods of concrete investigation quite unlike those of his metaphysics and portions of his physics.

He classified all rational knowledge, all the sciences, so to speak, according to their three main ends of *θεωρία*, *πρᾶξις*, and *ποίησις*. The first group has speculation and knowledge for its own sake as an end and aim. The second aims at knowledge as a guide to conduct, and the third seeks the knowledge of making things which are useful or beautiful.

The first group, which alone concerns us here, comprises metaphysics, mathematics, and physics. The last of these, physics, treated of everything

subject to movement and change, whether animate or inanimate, terrestrial or in the heaven. Such an illimitable topic included not only astronomy with physics in the modern sense, but biology as well. The Aristotelean treatises covering the first two subjects incline toward metaphysics through their frequent use of *a priori* arguments. In the scheme of the Master's *Posterior Analytics*, such reasoning from universal principles belongs to the syllogism, or deduction, in contrast to induction or the drawing of a general conclusion from particular instances. Hence in the physical treatises Aristotle still shows himself a logician and metaphysician. But in his zoological work direct investigation and reasoning from its results come to their own, though other modes of argument are also used.

The *Historia Animalium* assembles the data and gives an ordered description of the parts and organs of animals, while the *De Partibus Animalium* discusses their causes and reasons. In the realm of living nature Aristotle was an original investigator and a pioneer. Born in a medical family, likely he had received some knowledge in his boyhood of anatomy and physiology; had observed dissections and practised them himself. Through the middle period of his life, he made researches in natural history, and dissected warm-blooded animals and fishes in the island of Lesbos and other localities near the sea. No one will read far in his biological works without seeing that in Zoology Aristotle was very much at home. He seems to have felt that living growing

organisms could not be viewed simply from the standpoint of their being what they were. For him any adequate investigation must consider what they were growing into and becoming, and treat them functionally in their processes and activities ; nor should one fail to note the inherent element of design or purpose in the adaptation of their parts. The principle that Nature does nothing in vain applies most pertinently to the production and growth of the parts of living organisms, whose final cause—the purpose or principle of their life and being—most evidently determines their form and essence.

Moreover animals, which live and move and feel and procreate, are more concrete and individual than rocks and earth and sea, or even than the productions of art. They are obvious unities and wholes ; they prove themselves organisms. And the further fact that they admit of and demand arrangement in groups and species lends them clearer definitude, design and charm, and renders them more beautiful examples of the order and purposes of Nature.

The reader of the opening sections of the *De Partibus* may well imagine that Aristotle, while studying animals and their organs, in which Nature works so purposefully, was drawn to reflect in his own thought the apparent character of her processes. His endeavour is to understand and describe, even explain, Nature's concrete living productions. He will accompany her in her makings step by step, and realize, as it were, her motives and her designs.

He is still seeking knowledge for its own sake, and not with the motives of an artisan or artist. But he constantly helps himself to understand these productions of Nature by the use of illustrations drawn from the productions of human artisans and their way of making things.

In a famous passage in the first book of the *De Partibus*, Aristotle apologizes, as any pupil of Plato would, for turning from the eternal heavens to the corruptible things of earth, and at the same time suggests reasons for a change of method in the study of the latter :

Of " things constituted by nature some are ungenerated, imperishable, and eternal, while others are subject to generation and decay. The former are excellent beyond compare and divine, but less accessible to knowledge. The evidence that might throw light on them, and on the problems which we long to solve respecting them, is furnished but scantily by sensation ; whereas respecting perishable plants and animals we have abundant information, living as we do in their midst, and ample data may be collected concerning all their various kinds, if only we are willing to take sufficient pains. Both departments, however, have their special charm. The scanty conceptions to which we can attain of celestial things give us, from their excellence, more pleasure than all our knowledge of the world in which we live ; just as a half glimpse of persons that we love is more delightful than a leisurely view of other things, whatever their number and dimensions.

On the other hand, in certitude and in completeness. our knowledge of terrestrial things has the advantage. Moreover, their greater nearness and affinity to us balances somewhat the loftier interest of the heavenly things that are the objects of the higher philosophy. Having already treated of the celestial world, as far as our conjectures could reach, we proceed to treat of animals, without omitting, to the best of our ability, any member of the kingdom, however ignoble. For if some have no graces to charm the sense, yet even these, by disclosing to intellectual perception the artistic spirit that designed them, give immense pleasure to all who can trace links of causation, and are inclined to philosophy. . . . Absence of haphazard and conduciveness of everything to an end are to be found in Nature's works in the highest degree, and the resultant end of her generations and combinations is a form of the beautiful."

One may ask whether Aristotle found in zoology a kind of truth differing from that of logic and metaphysics. The rationale of animals and plants might hark back to ultimate metaphysical grounds. His physics, at all events, rested on such. However this query should be answered, he modified his method of inquiry when passing from the general reasoning of his physics and astronomy to the closer study of animal parts and functions.[1] The change came

[1] For more of Aristotle's biology I refer to the writings of Dr. Charles Singer and Prof. D'Arcy Thompson, mentioned in my little *Greek Biology and Medicine* (Boston, 1922).

easily with him; it was required by the character of the investigation and suggested by the methods of those who had studied animals before him. Among them were doubtless a number of unnamed physicians, some of whose works have found a place in the collection of Hippocratic writings.

Aristotle regarded medicine as a science with a practical end, which was health. Its best practitioners spoke and wrote of it as an art (τέχνη), the art of healing. Their knowledge served their art, which was a science too, because based on generations of experience and clinical observation, all contributing a rational understanding of the human system in disease and health. Besides such men, there were plenty of empirics and charlatans, whose practice followed the supposed effects of casual or bogus remedies.

The Hippocratic school, to whom we mainly refer, set their well-considered fund of clinical experience above the theories of philosophers as to Nature in general and the causes of disease. Wisely, and sometimes contemptuously, they rejected theories which, if not baseless, failed at least to square with the facts it was their business to work with. A physician would be culpable who permitted such theories to turn his practice from the teachings of experience.

The controversial tract *On Ancient Medicine*, which usually is placed first in the Hippocratic collection, maintains that medicine is a true art properly based on long experience accumulated by its practitioners.

It has no need of any such hypotheses as the philosophers have devised, which may apply to things of the heavens and things under the earth, of which we know nothing, so no appeal can be taken to any knowledge ascertained through experience.

The true art of medicine has grown through observation of the needs and diseases of men, not through the acceptance of some hypothesis as to their cause. Why theorize as to the ill effects of hot, or cold, or moist, or dry in man, when experience shows the evils of an improper diet and the good results from changing it in cases of disease.

" Certain physicians and philosophers assert that one cannot know medicine without knowing what man is, how he originally came into existence and of what substances he was compounded in the beginning. . . . Now the contention of these men really looks to philosophy, as do Empedocles and others who have written concerning Nature. As for me, I consider that what a philosopher or physician has said or written of Nature has less relevancy to medicine than to painting ; and I am of opinion that, so far as concerns knowledge of Nature, one can know nothing definite about it except from medicine ; but this may be thoroughly learned, when men go about it rightly. Hitherto, it seems to me, we are far from it : far, that is to say, from having a scientific knowledge of what man is and to what cause he owes his origin and the rest. Now so much at least it is indispensable that the

physician should know concerning Nature and should greatly concern himself to know, if he is to do any part of his duty ; to wit, what a man is relative to meat and drink, and what he is relative to the rest of his mode of life, and what results follow for the individual from particular things, and all this not merely in general terms, as *e.g.*, ' cheese is unwholesome food, for it distresses one who eats plentifully of it ' ; but what particular distress it causes, and for what reason, and to what ingredient of the man's constitution it is unsuitable."

There are hypotheses and hypotheses. Empedocles devised his fateful four elements, with Love and Strife to mix them, as an attempt to explain the origin of the World. It was his hypothesis, or conjecture set under, to account for things, and " save the phenomena ", as Plato said. But it was so general, and so remotely related to the facts it should account for, that it lacked utility. It did not apply to the sick man on his couch, nor offer suggestions for beneficial treatment. The physician must learn of the human constitution and its action in disease through long observation of the course of acute diseases and their termination in the patient's recovery or death ; and by studying the effect of dieting and other remedial measures. Of course, as one who thinks as well as perceives, the physician will generalize from the experience of his teachers and himself, and form rules, even reach general principles concerning human nature and disease. These principles or conclusions are drawn from

observation, and become working hypotheses to be applied in like cases.

Many such entered the Hippocratic art : for example, two very general and still acceptable hypotheses, that each disease has its own nature and arises from natural causes, and secondly that the healing energy of nature—*vis medicatrix naturae*—brings recovery, while the physician's art lies in aiding its operation. There was the more specific hypothesis as to crises or critical days in every sickness, and the famous conception of the four humours representing the four elemental qualities of every human body. The last was perhaps the hypothesis of ancient medicine which had least evidence to sustain it, and was in this respect most kin to the theories of Empedocles which the good Hippocratic would have none of.

Thus, as a different subject matter evoked a different method, natural science diverged from philosophy. But soon another difference appeared, akin to the preceding. Philosophy looks within, and draws its conclusions from the stored and cumulative web of logical thinking ; while science very consciously endeavours to observe the outer world and formulate laws to account for the results of its observations.

Of course, science and philosophy lean upon each other. Whenever there is a volume of living science, philosophy will look to it for facts to philosophize about, and will test its method and conclusions. On the other hand, science may look to philosophy for

the approval of its ways and the confirmation of its "laws". Nevertheless as the two differ both in subject matter and method, the conclusions reached by scientist and philosopher are apt to follow the leading of what the one or the other is chiefly occupied with. With the great philosophers there may be a large and penetrating consideration of scientific data ; yet the logic of their minds shapes their systems, rather than direct observation of facts. Plato followed his logic, winged with imagination as it was ; and so did Descartes and Spinoza. Their interest in the actual world of observation bent before their intellectual insistencies. In the language of some modern psychologies, the philosopher is the thoughtful introvert, while the scientist is the rational observant extravert. Hegel said that philosophy begins where thinking about thought begins. Yet science, as well as philosophy, represents the human need to know, pushing toward its satisfaction. It may be that the primary function or value of the one as of the other is to enlarge and gratify the mind.

CHAPTER IV

SCIENCE

I HAVE been a historian of human endeavour, and it is as a humanist that I am concerned with science. Occupied, as I have been, with man and his history —the history of the conduct and growth of the mind —I was drawn to the history of science and led to contemplate the intellectual attitude of scientific men. History meant for me the thing itself, *e.g.* science in its genesis and growth, its organic and continuous being. Of late years, I have always thought of the history of philosophy or the history of science as philosophy or science in its course and entirety. So the whole Plato or Kant or Darwin would be Plato or Kant or Darwin throughout his life from birth to old age. Even inheritance from ancestors should be included.

Philosophy as well as science has also seemed to me a homogeneous whole. Each represents a human tendency or phase, a mode of insatiate curiosity, continuing and even progressing through the centuries. Each presents a definite and charac-

teristic effort to gratify such curiosity, and follows its own procedure, which responds to the nature of the quest. The course of each is a continuity, and forms a whole.

Neither science nor philosophy lacks idealizing motive. The idea of perfectness rounding into beauty is germane to any straining of the mind, and assuredly to the straining after knowledge. Curiosity passes naturally into a desire to know what is most pleasing, excellent, perfect, and so what is beautiful to the mind. Philosophy has always been idealistic, seeking to set profoundest truth in well-patterned systems, in beautiful relations. Mathematicians seek the simplest and most felicitous and efficient demonstration. It is beautiful ; gives them æsthetic pleasure. Do not also all arts of self-expression strive for the perfect form ? Why overlook a corresponding motive in the endeavour of the scientist seeking truth ? The greatest men of science have had this motive, or have been possessed by it.

While science is for me a phase of the human mind, the humanistic motive does not bound my interest in it. My love of Nature does not end with man the seeker after natural knowledge. I would know what I may of the outer world. Curious as to whatever strikes upon the senses, I should like to find out its significance. My scientific knowledge is slight ; yet I have been thinking upon scientific values and validities compared with other phases of effort for worth and truth.

The sciences stir one's imagination, and open

vistas to its play. Geology's age-long story is a prodigious epic. Palaeontology offers a field for meditation on the evolution of organisms. And each spring season sets me to musing upon the infinitude of cell formation in the trees and grass.

Some sciences suit me better than others. Geology and palaeontology are picturesque. Zoology and botany are fascinating. I can read biology with deep interest ; though the cell and its genetics are difficult for one who has not worked in a laboratory. To such a one chemistry is well-nigh impossible. I get little beyond *generalia* from it. Nor can I follow the arguments of mathematical physics, because, to my sorrow, I am no mathematician. When young I was neither clever nor stupid in mathematics. I have matured in quite other ways of thinking, and now my mind seems unconformable to mathematics. An algebraic equation worries me. Lack of mathematics is a handicap.

I

Antecedents and Revivals

Most of our serious ideas go back to Aristotle or Plato. Among them is the distinction between a science conceived as pursuing knowledge for its own sake and a science conceived as having a practical end. One may criticise this distinction on the score of convenience, since it is not always easy to detect just when some utility or value, besides the pleasure of knowing, enters the mind of the investi-

gator. Be this as it may, at least one may ask in what respect any utility or value or " practical end " differs essentially from the pleasure taken in knowledge. In all cases it would seem that the object is the well-being or happiness lying in the energizing or functioning of our nature.

There is difference in the forms of these pleasures. The question is as to their human value, whether the particular element of happiness be knowledge, or some other pleasurable experience. Knowledge for the sake of knowing may have little worth when the end is the gratification of a trivial curiosity. All depends on the largeness or enduring quality of the happiness afforded by the knowledge gained, or on the nature of the " practical " benefit or easement of function which the knowledge sought will bring. In either case, the question is whether the proper well-being of man is ministered to or fulfilled in a way that harmonizes with his total Self. The test of the value of knowledge sought for its own sake lies in its relation to the whole personality of the seeker, and whether its pursuit is a functioning of his highest qualities.[1]

To-day there is another triumphant theme of song—the prodigious utility of scientific discoveries. Even those who praise bygone simplicity recognize the achievements which have set our time apart from all preceding ages. But my theme is not the far-flung delights of radio and cinema, or the exalted speed at which we move, nor even our more assured

[1] *Ante*, Chapter I.

health and the better plumbing of our houses. My interest is in the human values unfolding in the seeker after scientific knowledge, and touches the problem of the validities yielded by this manner of inquiry.

The cleavage between science and philosophy, as shown in the last chapter, responds to the two phases of our questing intelligence. The Greeks loved wholeness. Yet a friendly parting of the ways appeared in Aristotle, while, more truculently, the science or art of medicine broke with philosophic theorizing. And when, nearly two thousand years later, natural science again started, say with Leonardo, on a lusty course, it was unlearned and careless of philosophy. Naïvely it sought for facts, and would not look to the dialectic of the mind for the establishment of truth.

But philosophy in its function of ultimate testing and consideration, was always ready to regard the masterful intellectual interests of the time. If, during the long period between the Greeks and Leonardo, it paid small attention to science, the reason was that science made slight demand for recognition. This will appear in the next chapter, where it will also appear that, when science rose again to run its course, philosophy quickly adapted itself to the changed situation.

It may be said that Leonardo da Vinci (1452–1519) and men of the next generation inaugurated a revival of science. It is said more frequently that in the same period, or earlier, there took place a revival

of letters, painting, and sculpture. Indeed because of many " revivals " the period is called the Renaissance—a name which I dislike as giving a false conception of the progress of humanity, in Italy and elsewhere, in the fourteenth, fifteenth, and sixteenth centuries. Thinking mainly of Italy, I should say that these were centuries of human growth. There had come mechanical and chemical discoveries. Commerce extended ; wealth and material civilization increased greatly. Knowledge grew and thought quickened. Scholarship was more generally and ardently pursued. Sculpture and painting were magnificent. A livelier interest was taken in the direct investigation of nature, especially toward the end of the period.

The term " revival " has different meanings when applied to the various features of this human advance. In scholarship it means that there was gained a clearer understanding of the Latin classics, and then a knowledge of the Greek. Applied to sculpture, it means that the art had made great progress, partly through the influence of antique models, which sculptors were using more capably. From lack of models, there was less direct antique influence in the " revival " of painting, which in this period became the loveliest child of the Italian genius. There was surely growth of the human spirit in these " revivals ", indeed this was their moving energy. Yet much was due to the recovery of the art and literature of the classic past.

Not so as touching the revival of natural science.

To be sure, the recovery of what the Greeks had known, in physics for example, or medicine, now went beyond what the Middle Ages were acquainted with or, perhaps, fitted to use. In astronomy Copernicus was to make a new and prodigious use of the Ptolemaic observations; after him Galileo would use the ancient mathematics and mechanics as a springboard from which to leap into his "Two New Sciences". But the essence of the scientific revival did not lie in any rediscovery or even use of ancient knowledge. It lay in the rising spirit of direct investigation. This was not the fruit of any recovery of the classic knowledge of nature, nor did it spring from any classical stimulus. It was in its essence unlearned and original. If it resembled the spirit of Greek science, this was because, like the Greek, it represented a lively curiosity investigating for itself rather than referring to authority.

In fine, the time had come in Italy, and more slowly in other countries, when the growth of taste, knowledge, and faculty was to break from scholastic systems with their dual insistence upon authority as well as reason. No longer would active-minded men stay with the Church Fathers or the Scholastics, or bury themselves in the Civil Law. A hard-headed pragmatism was entering politics, in France with Louis XI. and Commynes, in Italy with many astutely lying despots and with Machiavelli, who, though an admiring student of the past, built his political science upon the *forza delle cose*. The ideal of nature's truth was entering art. Giotto, Masaccio,

Leonardo were intent upon depicting, in their natural form and grouping, not merely woods and grass and animals, but the drama of human life. Under the sway of kindred impulses, those who wished primarily to know the facts, the natural truth, of man and the world about him, turned to direct investigation, through observation, dissection or experiment. By reason of its moving spirit, this revival of natural science was essentially self-sprung, and quick to dissent even from such authorities as it found occasion to use.

Thus Leonardo, Vesalius, Copernicus, and then Galileo worked to gratify their curiosity. What they drew from the ancient writings was scarcely part of their essential achievement. Except, of course, except indeed for this, that the past enters genetically and formatively into all men, and none can set a limit upon what his own creative mind has received from the intellectual equipment of his ancestors.

So these men flung themselves joyously into natural science; it was observation, dissection, and experiment with Leonardo and Vesalius, and ceaseless observation and experiment with Galileo. Leonardo clung also to mathematics, saw it living in the flight of birds, and Copernicus and Galileo made immortal use of it. Having no qualms as to the validity of their way of penetrating to a knowledge of nature, they needed no philosophy.

Leonardo declares he will have nothing to do with baseless theorizing. The tone of the Hippo-

cratic *Ancient Medicine* is heard again : " Those sciences are vain and full of errors, which are not born of *esperienza*, mother of all certitude, and which do not terminate in *esperienza* taken cognizance of ; whose origin or middle or end does not come through one of the five senses ". He has much more to like effect.

By *esperienza* Leonardo may mean either experience or that artfully directed form of experience which is called experiment. And with him the testing of observation and experiment should proceed " through mathematical demonstrations . . . There is no certitude where some one of the mathematical sciences cannot be applied ". Nature's forces are quantitative and proper subjects for quantitative investigation and discovery. Nature's economy is mathematical. So mathematics must be applied to the experience of the senses. Nature is rational from the point of view of the investigator, because she may be quantitatively and mathematically studied, and conclusions may be stated as Nature's laws or *ragioni*.

But Leonardo, too many-sided for consistency, felt that beyond the testimony of the senses as to Nature's *effetti* or phenomena, there was an unknowable essence or *quiddità* ; and he was driven beyond his knowledge in some of his speculations upon force. Scientifically he was best as a dissector and delineator of bodies, human and brute ; since Aristotle there had been no investigator of living organisms as great as Leonardo. But his artist soul

was too full of the delight in living things to set limits to its wonderment at Nature.

Vesalius, who rather than Leonardo is usually called the father of modern anatomy, was a single-minded anatomist, untempted by the beguilements distracting one who was artist and engineer as well. The energies of this self-willed genius were entirely set upon the study of the human body, and no more than the fecund race of anatomists and physiologists after him was he harassed by any doubt of the competency of investigation to afford the basis of valid conclusions. Physiology went on its course, rightly undisturbed by doubts as to the validity of its results. Yet it was constantly uncovering unsolved problems, not to say mysteries.[1]

The vital inception or revival of natural science in the sixteenth century extended through the two general fields of mathematical physics and biological science. It was simple-minded and naïve, philosophically considered ; and, ever since, science for the most part has continued unsophisticated. It

[1] There has recently been published a curious testimony to the general fact that, when the time is ripe, more than one man uses a like procedure and seems to press toward the same discoveries. Vesalius was acquainted with his contemporary Canano of Ferrara, who was proceeding along the same track of original anatomical dissection and description. But when Vesalius showed him the sheets for his forthcoming book, apparently Canano dropped his own contemplated work, of which he had published the first part, perhaps in 1541. See *Joannes Baptista Canano* (1515 – 1578), *Musculorum humani corporis picturata dissectio*, recently edited by Cushing and Streeter.

has assumed that the physical world (and the mind !) is knowable as it is, or at least as it may eventually be discovered to be. Yet the confidence of this young realism has received many a jar. Criticism has shown the contradictions inhering in such assumptions ; and the progress of science itself has uncovered pitfall after pitfall in the path of the would-be revealers of Nature's secrets. Sanguine are those souls who hope to present consistently even the carefully sifted facts admitted to be pertinent.

And the good scientist is artless. Curiosity impels him ; he opens one door after another, and often finds his sought-for answer in quite an unexpected quarter. He avoids the forms of logic—the syllogism would tie his hands and bandage his eyes. Impulse drives him to find out. He cannot. He stumbles in his mind, gropes with his hands : he is stopped. Suddenly barriers fall ; he has broken through ; he has grasped the clew, the tell-tale fact.

Has he had any conscious assumption in his mind, a working hypothesis, an urge in some direction ? Postulates, discreetly chosen for his purpose, may have steered him. Afterwards he tests what he has seemed to find, and is prone to reject it if it will not fit in with prior ascertainments. Or he slicks it up, presents it to himself as an induction. So he doubly rationalizes it, for he has made his result appear as a logical induction and has shaped it to conform with the attitude and contents of his mind, and perhaps the ways of thoughtful contemporaries. There may be adaptation and

adjustment in his time of breaking through ; there is consciously intended adjustment in the shaping of his conclusion ; and obviously adjustment is of the essence of the final rationalization of his result.

But it may happen that he has been brought to some discovery or result which upsets his prior opinions. His result seems to stand firm in a new won empirical certitude : it is a *fact*. He has therefore to retest his opinions relating to its field, and perhaps reshape or pull down the structure of his pertinent thoughts. So far there appears little self-conscious method in his madness. Yet method is evolving and may be reaching a conscious consistency with the clearing up of his substantial conclusions. For this may carry a growing consciousness of the manner or method by which these conclusions have been reached.

II

Procedure : Galileo, Newton, Faraday, Darwin, Pasteur

Philosophy and science, viewed as efforts of the mind, consist in intellectual endeavour, for ultimate truth in the case of philosophy, and for natural knowledge in the case of science. Regarding science thus, the tale of its discoveries is not to the point. One might better seek to grasp the inner purpose of its votaries, and understand the manner of their endeavour. For this it might be necessary to

consider not only the objects of their search, but their methods in following them. Here one must not be meticulous. As to method, the great men—Galileo and Newton, Pasteur and Darwin—have dropped but casual remarks. Galileo and Newton investigated the motion of bodies ; Pasteur and Darwin the life of organisms. No one of them attempted to formulate his way of working. People who write about method would discover and put together a method for each of these men. They, however, substantiated their thoughts as best they might, using their minds and common sense to avoid fallacy and error. They had method assuredly, but no wish to formulate it in any way to tie their hands. It was a rational usage which their intelligence followed as suiting the investigation, and a living element alike of their endeavour and achievement. Its vitality may escape through the meshes of another man's discussion.

" To give us the science of motion ", exclaimed Galileo's friend Fra Paolo Sarpi, " God and Nature joined hands and created the intellect of Galileo." [1]

In his *Two New Sciences*, at the beginning of the " Third Day ", Galileo says : " My purpose is to set forth a very new science dealing with a very ancient subject. There is, in nature, perhaps nothing older than motion, concerning which the books written by philosophers are neither few nor small ; nevertheless I have discovered by experi-

[1] Favaro's Introduction to the translation of Galileo's *Two New Sciences*, by Crew and De Salvio (1914).

ment some properties of it which are worth knowing and which have not hitherto been either observed or demonstrated. Some superficial observations have been made, as, for instance, that the free motion [*naturalem motum*] of a heavy falling body is continuously accelerated ; but to just what extent this acceleration occurs has not yet been announced ; for, so far as I know, no one has yet pointed out that the distances traversed, during equal intervals of time, by a body falling from rest, stand to one another in the same ratio as the odd numbers beginning with unity.

" It has been observed that missiles and projectiles describe a curved path of some sort ; however, no one has pointed out the fact that this path is a parabola. But this and other facts, not few in number or less worth knowing, I have succeeded in proving ; and what I consider more important, there have been opened up to this vast and most excellent science, of which my work is merely the beginning, ways and means by which other minds more acute than mine will explore its remote corners.

" This discussion is divided into three parts ; the first part deals with motion which is steady or uniform ; the second treats of motion as we find it accelerated in nature ; the third deals with the so-called violent motions and with projectiles."

A new section opens with an oft-quoted passage : " The properties belonging to uniform motion have been discussed in the preceding section ; but accelerated motion remains to be considered.

" And first of all it seems desirable to find and explain a definition best fitting natural phenomena. For anyone may invent an arbitrary type of motion and discuss its properties (as certain men have done) . . . but we have decided to consider the phenomena of bodies falling with an acceleration such as actually occurs in nature and to make this definition of accelerated motion exhibit the essential features of observed accelerated motions. And this, at last, after repeated efforts we trust we have succeeded in doing. In this belief we are confirmed mainly by the consideration that experimental results are seen to agree with and exactly correspond with those properties which have been, one after another, demonstrated by us. Finally, in the investigation of naturally accelerated motion we were led, by hand as it were, in following the habit and custom of nature herself, in all her various other processes, to employ only those means which are most common, simple and easy."

Thus far Galileo. Now as to the subject of the *Principia*. Since the moderns, says Newton in his preface, " have endeavoured to subject the phenomena of nature to the laws of mathematics, I have in this treatise cultivated mathematics so far as it regards philosophy ". After referring to the difference between geometry and mechanics, he says that " rational mechanics will be the science of motions resulting from any forces whatsoever, and of the forces required to produce any motions accurately proposed and demonstrated ".

The definitions of mass and the forces resulting in motion or rest follow the Preface ; and then come the " Axioms or Laws of Motion ", with a number of corollaries. All this precedes Book I., which bears the same heading as Book II.—" Of the Motion of Bodies ". So motion is the apparent subject of the *Principia* ; but note that the full title of the work is *Mathematical Principles of Natural Philosophy*. Bearing in mind that motion is a manifestation of some cause called force, one may turn to further pregnant sentences of the Preface :

" Our design not respecting arts but philosophy, and our subject not manual but natural powers, we consider chiefly those things which relate to gravity, levity, elastic force, the resistance of fluids, and the like forces, whether attractive or impulsive ; and therefore we offer this work as *mathematical principles of philosophy* ; for all the difficulty of philosophy seems to consist in this—from the phaenomena of motions to investigate the forces of nature, and then from these forces to demonstrate the other phaenomena ; and to this end the general propositions in the first and second book are directed. In the third book we give an example of this in the explication of the System of the World ; for by the propositions mathematically demonstrated in the first book, we there derive from the celestial phaenomena the forces of gravity with which bodies tend toward the sun and the several planets. Then from these forces, by other propositions which are also mathe-

matical, we deduce the motions of the planets, the comets, the moon, and the sea."

The tenor of Newton's reasoning and the procedure of his book will be mathematical throughout, like the reasoning of Galileo. Both Newton and Galileo made observations and experiments, and reasoned from them mathematically. Thus they obtained the corroboration of observed or discovered fact to assure themselves and others of the validity of their mathematics. It may be that occasionally, with each of them, the observed fact—the swinging of the hanging lamp in the Pisan cathedral, the famous fall of the apple—suggested the course of reasoning. And doubtless some of the fundamental principles of motion, afterwards demonstrated by them, were in their minds, as postulates or as convictions, before they carried through their prodigious mathematical demonstrations. Newton was convinced of the truth of the Law of Gravitation before he set out to prove it.[1]

Mathematics was fundamental with both of them and essentially sufficient. Says Galileo in a frequently quoted letter to Licetus : " Philosophy is written in that great book which ever lies before our

[1] The fall of Newton's apple may be mythical, though I should prefer to say symbolical of all the objects which he and others had seen falling about them since their childhoods. Newton probably was more constantly impressed and intrigued by the falling in of the Moon in its orbit around the earth. Other " natural philosophers " of Newton's time accepted the inverse square of the distance as the law of gravitation. Newton proved it.

eyes—I mean the universe—but we cannot understand it if we do not first learn the language and grasp the symbols in which it is written. This book is written in the mathematical language, and the symbols are triangles, circles, and other geometrical figures, without whose help it is impossible to comprehend a single word of it." [1]

Galileo was a great experimenter, and yet may hint that he experimented chiefly to prove his theses to stupid people ; and Newton in a number of passages seems to limit himself to proving his results as sheer mathematical conclusions, bearing no necessary relation to forces or facts beyond themselves. In the explanation attached to Definition VIII. touching the " motive quantity of a centripetal force ", he says : " For I here design only to give a mathematical notion of those forces, without considering their physical causes and seats ".

On comparing the last paragraph of the same explanation, it would seem as if Newton meant to give just a mathematical scheme of nature's forces as evinced in motions. " I . . . use the words attraction, impulse, or propensity of any sort toward a centre promiscuously, and indifferently, one for another ; considering those forces not physically but mathematically : wherefore the reader is not to imagine, that by these words, I anywhere take upon me to define the kind, or the manner of any action, the causes or the physical reason thereof, or

[1] Translation from E. A. Burtt, *Metaphysical Foundations of Modern Physical Science*, p. 64 (N.Y., 1925).

that I attribute forces, in a true and physical sense, to certain centres (which are only mathematical points) ; when at any time I speak of centres as attracting, or as endued with attractive powers ". The mathematical point symbolizes a focus for the force of gravity.

Galileo sought to distinguish the essential features of a natural phenomenon so that they might be measured and formulated mathematically. The next step would be to show that his formula held for all similar instances. Experiment will then confirm the general truth and convince those requiring tangible proof. This demonstrated truth or formula may be applied provisionally, as a postulate, to other and closely related phenomena—as Galileo says of such a situation : " Let us then for the present, take this as a postulate, the absolute truth of which will be established when we find that the inferences from it correspond to and agree perfectly with experiment ". [1]

Touching the causes of motions, Galileo kept in view the directly acting mechanical forces which he held to be invariable in their action. There is an initial cause of every motion, which in turn becomes the cause of its own continuance. It may be accelerated, deflected, or stopped, by some directly acting force. But the discussion of such force should be kept distinct from the study of the motions accelerated or arrested by them.[2] The first originat-

[1] *Two New Sciences*, p. 172.
[2] Cf. *Two New Sciences*, pp. 166 *sqq.*

ing cause or force, like the final cause or end, was a mystery, or, at all events, " belonged to a higher kind of science ". Galileo's method touched no such riddles.[1]

We turn again to Newton opening the third book of his *Principia* : " In the preceding books I have laid down the principles of philosophy ; principles not philosophical, but mathematical ; such, to wit, as we may build our reasonings upon in philosophical inquiries. [One may to-day partially substitute the word *physics* or *physical*, or, as we still say, *natural philosophy*.] These principles are the laws and conditions of certain motions, and powers or forces, which chiefly have respect to philosophy ; but lest they should have appeared of themselves dry and barren, I have illustrated them here and there with some philosophical scholiums, giving an account of such things as are of more general nature, and which philosophy seems chiefly to be founded on ; such as the density and resistance of bodies, spaces void of all bodies, and the motion of light and sounds. It remains that, from the same principles, I now demonstrate the frame of the System of the World ".

He says that he had composed the third book, on this subject, in a popular manner : [2] " but afterwards, considering that such as had not sufficiently entered into the principles could not easily discern the strength of the consequences, nor lay aside the

[1] *Two New Sciences*, p. 194, and *Two Great Systems*, pp. 210 *sqq*.

[2] I think this is the same as that given in the third volume of Motte's translation of the *Principia*.

prejudices . . . I chose to reduce the substance of this book into the form of propositions (in the mathematical way) ".

Then he states his *regulae philosophandi*, with their explanations.

Rule I. " We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances ". He justifies this rule : " To this purpose the philosophers say that Nature does nothing in vain, and *more* is in vain when less will serve ; for Nature is pleased with simplicity, and affects not the pomp of superfluous causes ".

Rule II. " Therefore to the same natural effects we must, as far as possible, assign the same causes ". He illustrates by the example of " respiration in a man and in a beast ; the descent of stones in Europe and in America. . . ."

Rule III. " The qualities of bodies, *which admit neither intension nor remission* of degrees, *and which are found to belong to all bodies within the reach of our experiments*, are to be esteemed the universal qualities of all bodies whatsoever ". There follow a number of examples.

Rule IV. " In experimental philosophy we are to look upon propositions collected by general induction from phaenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined, till such time as other phaenomena occur, by which they may either be made more accurate, or liable to exceptions ".

" This rule we must follow, that the argument of induction may not be evaded by hypotheses ".

Newton then describes certain observed " phaenomena or appearances " connected with Jupiter and its satellites and with other planets. The rest of the book contains Propositions or Theorems, which are proved through observations with mathematics applied to them. There is a " General Scholium " placed at the end of later editions of the *Principia*, in which Newton argues against the hypothesis of *vortices*, and discourses on the governance and nature of God. " This most beautiful system of the sun, planets, and comets, could only proceed from the counsel and dominion of an intelligent and powerful being. And if the fixed stars are the centres of like other systems, these, being formed by the like wise counsel, must be subject to the dominion of One ; especially since the light of the fixed stars is of the same nature as the light of the sun. . . . God is omnipresent not *virtually* only, but also *substantially* ; for virtue cannot exist without substance ". More follows on the attributes and nature of God.[1]

" Hitherto we have explained the phaenomena of the heavens and of our sea by the power of gravity, but have not yet assigned the cause of this power. This is certain, that it must proceed from a cause

[1] The last passages are not in the first edition of the *Principia* ; but are in the London edition of 1713. There are letters of Newton as early as 1690 showing his interest in theology.

that penetrates to the very centres of the sun and planets, without suffering the least diminution of its force ; that operates not according to the quantity of the surfaces of the particles upon which it acts (as mechanical causes use to do), but according to the quantity of the solid matter which they contain, and propagates its virtue on all sides to immense distances, decreasing always in the duplicate proportion of the distances. . . . But hitherto I have not been able to discover the cause of those properties of gravity from phaenomena, and I frame no hypotheses ; for whatever is not deduced from the phaenomena is to be called an hypothesis ; and hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy. In this philosophy particular propositions are inferred from the phaenomena, and afterwards rendered general by induction. Thus it was that the impenetrability, the mobility, and the impulsive force of bodies, and the laws of motion and gravitation, were discovered. And to us it is enough that gravity does really exist, and act according to the laws which we have explained, and abundantly serves to account for all the motions of the celestial bodies and our sea."

Both Galileo and Newton may have been assured that mathematical demonstrations in themselves were unquestionably certain. The former argues, that by a slower process of ratiocination, they may attain such certainty as the Divine Wisdom

possesses.[1] The latter also has no qualms in speaking of "the certainty of mathematical demonstrations" in themselves. But when these come to be

[1] "You argue", says Salviati (Galileo) to Simplicius, "very cunningly, but . . . I must have recourse to a philosophical distinction, and say that the understanding has been taken in two ways, that is *intensivé* or *extensivé*; and that *extensivé*, that is as to the multitude of intelligibles, which are infinite, the understanding of man is as nothing though he should understand a thousand propositions; for that a thousand, in respect of infinity, is but a cypher; but taking the understanding *intensivé* . . . I say that human wisdom understandeth some propositions so perfectly, and is as absolutely certain thereof, as Nature herself. And such are the pure mathematical sciences, to wit, Geometry and Arithmetic, in which Divine Wisdom knows infinite more propositions, because it knows them all; but I believe that the knowledge of those few comprehended by human understanding, equalleth the divine, as to the certainty *objectivé*, for that it arriveth to comprehend the necessity thereof, than which there can be no greater certainty.

"*Simplicius.* This seemeth to me a very bold and rash expression.

"*Salviati.* These are common notions and far from all umbrage of temerity, or boldness, and detract not in the least from the majesty of Divine Wisdom; as it nothing diminishes the omnipotence to say, that God cannot make what is once done, to be undone. . . . As to the truth, of which mathematical demonstrations give us the knowledge, it is the same which the Divine Wisdom knoweth. But this I must grant you, that the manner whereby God knoweth the infinite propositions, of which we understand some few, is highly more excellent than ours, which proceedeth by ratiocination, and passeth from conclusion to conclusion, whereas His is done by a single thought or intuition." *Two Great Systems*, pp. 86-87 (Salusbury's Translation).

applied to the facts of observation, the result cannot be more certain than the data forming the subject of the mathematical reasoning. Says he in a defensive letter to the Secretary of the Royal Society : " In the last place, I should take notice of a casual expression, which intimates a greater certainty in these things, than I ever promised, viz. *the certainty of mathematical demonstrations.* I said, indeed, that the science of colours was mathematical, and as certain as any other part of optics ; but who knows not that optics, and many other mathematical sciences, depend as well on physical sciences, as on mathematical demonstrations ? And the absolute certainty of a science cannot exceed the certainty of its principles. Now the evidence, by which I asserted the propositions of colours, is in the next words expressed to be from experiments, and so but physical : whence the propositions themselves can be esteemed no more than physical principles of a science." [1]

Galileo and Newton used their powers of intuition and discriminating reason ; they made experiments constantly in the ascertainment of concrete fact. Mathematics was *par excellence* their means and method of co-ordinating, extending and universalizing their discoveries and conclusions. The scientific procedure of both started from axioms or postulates and from definitions which contained like assumptions ; and thence, carrying its ballast of observa-

[1] From Burtt, *o.c.* p. 216.

tions, it advanced to the statement of general conclusions or laws, which were inductions or issued from the awakened and enriched necessities of thought. Both men endeavoured to the utmost to exclude all hypotheses, save those general conclusions that shaped themselves upon observed facts and were the results, or the final expression, of the mathematical demonstrations which extended or universalized the bearing of those facts.

The use of mathematics and its symbolic reasoning as a chief constructive tool and means both of conception and statement appears to distinguish the science of Copernicus, of Galileo and of Newton from the science, say, of Vesalius and Harvey, the early protagonists of the biological sciences. These men, like Darwin and Pasteur long after them, observed closely and experimented, and then reasoned as best they might from the pertinent and sifted facts. In the place of mathematics they used constructively the rational and discriminating processes of the intellect, which embrace intuition and may also be ratiocinative without employing mathematical forms. Yet Leonardo, the predecessor both of Vesalius and Harvey, saw the application of mathematics to the forms and acts of living animals, the wings and flight of birds, for example. To-day biologists find that much of their work lies in quantitative measurements, and some of them make extensive use of mathematics, not only as the obvious means of measurement, but as the best way to state conclusions. And if, as Dr. A. N. Whitehead says,

all the sciences, physics as well as biology, must become sciences of organisms, the employment of mathematics may extend as throughout a common field.

But mathematics has not been used, largely at least, by every physicist. Faraday began as a chemist under Sir Humphrey Davy, and then branched outward to his life work on electricity and magnetism. He was no mathematician. But he worked with marvellous intellectual insight, veritably visualizing the action of these forces. In his mind he saw their doings before demonstrating by apt experiments just how in fact they acted. His intellectual apprehension, or understanding, extended to the limits of his mental vision, parts of which he rendered actual and visible through experiments. Experiments were his demonstrations, more entirely than with either Galileo or Newton. They filled a larger function in his pursuit of fact—a double function, if one will. Galileo and Newton used mathematical demonstration, and tested their results by observation and experiment. But with Faraday experiment (beyond the inner workings of his genius) represented both test and demonstration. It was the mirror of his insight and constructive intuition ; it was demonstration actualized in fact.

Faraday's great fame never destroyed his humility. He was ready always to admit any obscurity or inadequacy in his language. He knew he was no mathematician ; but genially he appreciated the worth of a younger genius, who was both physicist

and mathematician, Clerk Maxwell. In a long letter to him, in 1857, Faraday blames himself for the possible " vague use of expressive words. I perceive that I do not use the word ' force ' as you define it, ' the tendency of a body to pass from one place to another '. What I mean by the word is the source or sources of all possible actions of the particles or materials of the universe, these being often called the powers of nature when spoken of in respect of the different manners in which their effects are shown ".

He concludes with a pregnant question : " There is one thing I would be glad to ask you. When a mathematician engaged in investigating physical actions and results has arrived at his own conclusions, may they not be expressed in common language as fully, clearly, and definitely as in mathematical formulae ? If so, would it not be a great boon to such as we to express them so—translating them out of their hieroglyphics that we also might work upon them by experiment. I think it must be so, because I have always found that you could convey to me a perfectly clear idea of your conclusions, which, though they may give me no full understanding of the steps of your process, gave me the results neither above nor below the truth, and so clear in character that I can think and work from them ".[1]

The great representatives of the sciences of living organisms have followed methods fundamentally

[1] From Bence Jones, *Life and Letters of Faraday* (1870), vol. ii. p. 385 *sqq.*

analogous to those of Galileo and Newton. Darwin and Pasteur made little use of mathematics, certainly none at all to be compared with the mathematics of these two terrestrial and celestial physicists. But with like care they observed and experimented, tested and grouped their data. Their inductions followed the rational processes of the mind, of which mathematics is but a specialized symbolic portion.

All his life Darwin gathered facts and fruitfully pondered on their bearing and significance. But the five youthful years spent with the *Beagle* or ashore from it were pre-eminently his period of gathering and arranging facts. In reading and re-reading that admirable *Journal*, I delight in observing how the young Darwin always sees and states his facts with a mind unfailingly conscious of relationships; and how careful, as well as far-seeing, he is in his inferences regarding them—inferences which were to group themselves finally under the head of a fruitful induction. His grand intelligence is mature in the *Origin of Species*, which is a prodigious argument from facts observed and ordered according to their pertinency and light-bearing qualities. In the *Journal* he sees and notes those facts which have the widest relevance and meaning; in the *Origin* facts are accumulated, selected, and presented so as to constitute the argument. The introduction to the *Origin* opens thus:

"When on board H.M.S. *Beagle*, as naturalist, I was much struck with certain facts in the distribu-

tion of the organic beings inhabiting South America, and in the geological relations of the present to the past inhabitants of that continent. These facts, as will be seen in the latter chapters of this volume, seemed to throw some light on the origin of species —that mystery of mysteries, as it has been called by one of our greatest philosophers. On my return home, it occurred to me, in 1837, that something might perhaps be made out on this question by patiently accumulating and reflecting on all sorts of facts which could possibly have any bearing on it."

What he was to do with these facts as accumulated and arranged is shown by his great *Origin.* He opens the last chapter, entitled " Recapitulation and Conclusion : " " As this whole volume is one long argument, it may be convenient to the reader to have the leading facts and inferences briefly recapitulated ". Then he restates his argument in broad lines : " That many and serious objections may be advanced against the theory of descent with modification through variation and natural selection, I do not deny. I have endeavoured to give to them their full force. Nothing at first can appear more difficult to believe than that the more complex organs and instincts have been perfected, not by means superior to, though analogous with, human reason, but by the accumulation of innumerable slight variations, each good for the individual possessor. Nevertheless, this difficulty, though appearing to our imagination insuperably great,

cannot be considered real if we admit the following propositions, namely, that all parts of the organisation and instincts offer, at least, individual differences —that there is a struggle for existence leading to the preservation of profitable deviations of structure or instinct—and, lastly, gradations in the state of perfection of each organ may have existed, each good of its kind. The truth of these propositions cannot, I think, be disputed ".

Darwin marshals his facts according to their value for the great induction which he had conceived in the course of his earlier observations. The induction is the final expression of the linked and harnessed meaning of the facts as he has seen them. It may indeed extend its bases out beyond their range ; for the serious difficulties which bore against the sufficiency of natural selection compelled him to argue sometimes from suppositious facts and conditions, as in Chapter VI. of the *Origin.*

He suggests his occasional way of reasoning in a passage in the Introduction to his *Expression of the Emotions in Man and Animals.* " But there remains the much greater difficulty of understanding the cause or origin of the several expressions, and of judging whether any theoretical explanation is trustworthy. Besides judging as well as we can by our reason, without the aid of any rules, which of two or more explanations is the most satisfactory, I see only one way of testing our conclusions. This is to observe whether the same principle by which one expression can, as it appears, be explained is

applicable in other allied cases; and especially, whether the same general principles can be applied, with satisfactory results, both to man and the lower animals. This latter method I am inclined to think is the most serviceable of all. The difficulty of judging of the truth of any theoretical explanation, and of testing it by some distinct line of investigation, is the great drawback to that interest which the study seems well fitted to excite ".

These sentences are neither clear nor analytical. Yet their tenor is equivalent to a sentence from Galileo, already quoted, touching the probable application of a principle to a new situation: " Let us then for the present, take this as a postulate, the absolute truth of which will be established when we find that the inferences from it correspond to and agree perfectly with experiment ".

If Darwin's words might have been accepted by Galileo, Newton might have commended many utterances of Pasteur, as when he said to the Academy of Medicine, about 1874: " You wish to upset what you call my theory, apparently in order to defend another; allow me to tell you by what signs these theories are recognized: the characteristic of erroneous theories is the impossibility of ever foreseeing new facts; whenever such a fact is discovered, those theories have to be grafted with further hypotheses in order to account for them. True theories, on the contrary, are the expression of actual facts and are characterized by being able to predict new facts, a natural consequence of those

already known. In a word, the characteristic of a true theory is its fruitfulness ".[1]

Pasteur's experiments were carried through with scientific strictness, great attention being paid to the " control " and the interference of factors other than those the action of which was to be demonstrated. He had also constantly to guard against the cavillings of hostile critics. His methods were of the surest ; and level-seeing honesty dominated his scientific action. He exemplified his own remark— " In experimental science it is always a mistake not to doubt when facts do not compel you to affirm ".

Very different were the lives and scientific accomplishment of Darwin and Pasteur. If the work of the former has affected all thought since his day, one may say of Pasteur that his conclusions and achievements, so tremendous in their unquestionable benefit to the human race, go far toward the establishment of the validities of scientific observation, experiment, and inference.

Yes, and the assured results of science are valid, but only in the middle distances—that broad way of intuitional and partly rationalized discernment which holds a midway course between the vulgar apprehension of things, with its sense-deception and emotional distortion, and the endeavour for ultimate truth, which is philosophy. There is another qualification : scientific conclusions are valid for a time. I will not say, until they are overthrown, but rather until they are built upon and modified, and

[1] Vallery-Radot, vol. ii. p. 21.

progressively superseded. As Faraday put it when he had qualms as to Newtonian gravitation—"What is there about gravitation that should exclude it from consideration also? . . . I believe we ought to search out any deficiency or inconsistency in the sense conveyed by the received form of words, that we may increase our real knowledge, striking out or limiting what is vague. I believe that men of science will be glad to do so, and will even, as regards gravity, amend its description, if they see it is wrong. . . . That I may be largely wrong I am free to admit—who can be right altogether in physical science, which is essentially progressive and corrective".[1]

These words apply to periods of freely advancing scientific thought. For correction and advance it is essential that the prior conclusions should exist. Throughout all fields and avenues of spiritual or intellectual achievement, there is such historical continuity as must repose on the general and never absent need of some sort of cause for every effect—the need of enabling conditions.

III

The How and the Why

At present science is regarded by its more thoughtful votaries as an attempt to describe, and possibly

[1] Letter to E. Jones, June 1857, from Bence Jones, *Life and Letters of Faraday*, vol. ii. p. 382.

formulate, the phenomena of the world—the things which come, or may be brought, under observation. It would tell, perhaps not what they are, but what they do ; and how they apparently continue for a time, or change and pass. It is not tangling its steps with puzzles as to the nature of causation ; but is content to describe what is observed. It has given up the *why* for the *how*.

This view of science carries, of course, the refusal to consider ultimate problems, like reality or first or final causes. Galileo made this disclaimer for physics, and Newton likewise, in spite of the metaphysical or ultimate character of his definitions of absolute time and space.[1] Possibly the latest Einsteinean physics even seeks to discard whatever postulates or assumptions are not within the sphere of observation and to recognize only observable factors in its system. Yet it is pushed toward statements which seem to go far beyond.

A like disclaimer was entered for biology as soon as that became self-conscious. Says Pasteur : " Researches on primary causes are not in the domain of science, which recognizes only facts and phenomena that it can demonstrate ".

This abnegation may be an expression of the scientific ideal, and of the contentment of the scientist. He will have no desire, as a scientist, to go to the ultimate rational, or irrational, root of things. But he may have two minds, the one occupied with the investigation in hand, the other

[1] *Principia*, 1, 6 *sqq.*

looking beyond the investigation's scope and nature. The two may act alternately. No physicist, or biologist, while experimenting, doubts the existence of the external world, which then is impressing itself on both his mind and senses. But he may when meditating in philosophic leisure.

Within the admitted scope of scientific research, that middle region of observable facts and sequences, the distinction between the *how* and the *why* requires a little further consideration. Sixty years ago Claude Bernard was conscious of no such distinction, when he stated that the goal of experimental medicine was the discovery of the " causes " of the phenomena of health and disease.[1] Now " sequences " would be set in the place of "causes ". The scientist professes to investigate the sequence of phenomena, and declares that he is ignorant *why* they thus succeed each other. It is an attitude of honest humility ; but may also indicate his fear lest he be entangled in metaphysics. For the nature of causation is a metaphysical problem, which the mind struggles with for its own appeasement. The solution must be sought within the mind, as none is afforded by the outer world.

Science is vividly aware that no phenomenon or thing or event is or can be isolated or independent, and that the study of the world without, and even of the mind, is a study of interaction and relationship. It is believed that there is nothing static in the

[1] *La Médicine expérimentale*, Introduction. An English translation has been published by The Macmillan Co. (N.Y., 1927).

universe ; but that all things are dynamic, energetic. In such a universe all relationships are dynamic phases, part and parcel of a mutually conditioning and enabling situation. And if every element of this situation is dynamic, and either mutually conditioning or antecedent or sequent, we do not seem so far away from regarding everything as caused and causative. The distinction is metaphysical ; even as the distinction between the words *sequent* and *consequent*—one may ponder on the distinguishable implications of these two words.

Now for more practical considerations. In our daily lives and our judgement of courses of events, is not a large part of our intelligence occupied with discriminating between mere temporal and irrelevant priority and the enabling or causative factors in every situation or event ? He is an idiot who does not in some way distinguish between *post hoc* and *propter hoc*. And what else does the man of science do in his experiments ? Does he not try to exclude irrelevant and accidental factors which for his purposes, or because of the limits to his knowledge, confuse and stultify the result ? To this end (if he be a biologist) he provides a " control " or normal situation, with which to compare the conditions as he has modified them. He would say, not in the language of Claude Bernard but in that of to-day, that he is trying to distinguish between the uniform antecedent of his looked-for result and the accidental antecedent that intrudes. The latter is not in the line of invariable sequence, the true and invariable

sequence which he is seeking. Therefore it is not a proper factor in the result. The experimenter *feels* the relationship of cause and effect, and there is only a strand of metaphysics to keep him from expressing himself accordingly.

IV

Impeachments

The practical world has found abundant occasions for trusting science in its beneficent results. Nevertheless those people who like to test the grounds of their beliefs may find the method and conclusions of science open to a triple impeachment. First, with respect to the fundamental assumptions or postulates or postulated entities. Secondly, with respect to the data of observation and experiment. Thirdly, with respect to the processes of inference or induction or mathematical demonstration, which have elicited a conclusion from the data and the postulates.

Every branch of science is based explicitly or implicitly on postulates or axioms or definitions or assumed entities, which it makes no attempt to prove. Sometimes they are set in intellectual formulas which issue from the mind's own needs. Confidence in them is as a thing of faith. Fundamental to all sciences is the belief that an order of events (sometimes called a rational order) holds throughout nature whereby sequences of events may be both studied and relied upon, and even their future predicted. If this belief has come down from

Greece, nevertheless it springs afresh from the need inherent in any mind of a certain character when attempting to understand the outer world. It is a shield against intellectual despair, and is quite as much a creature of the mind as an actual reflection of occurrences which, save for diurnal and seasonal changes and the courses of the stars, seem a good deal of a welter.

Minds of another character have made no such assumption. The Hebrew prophets would have cast it out as a blasphemy on the wilful and righteous power of Jehovah. So would the Christian Fathers, who preferred miracles. With both prophet and Church Father the repulsion lay in a counter conviction that mankind and the world made for man were God's creatures, created for His purposes and held within the guard of His almighty hands. This gave to human life and the outer world a religious unity equivalent to the natural order upheld by the scientific faith.

Further postulates may belong more specifically to certain sciences than to others. Or the postulates of the more basic science may carry over less explicitly into another, as the postulates of physics carry over silently into the biological sciences, which have physics as a submerged base. But these postulates do not hold forever. Within the last few decades, as we know, some of Newton's assumptions, postulates or entities, however we may term them, have been abandoned. Such uncrowned Titans are solid matter, stable mass, absolute space and time,

and possibly the outcome of his system, gravitation, regarded as a force. In the generation before Newton it would seem to have been a postulate with Kepler, or his *a priori* intellectual and æsthetic conviction, that the universe is a perfect mathematical system; but he insisted on the experimental verification of any given mathematical hypothesis.[1] So the axioms or definitions of Euclid's geometry were necessary and rather exclusive truths till about a century ago. Now, while not discredited for common use, they share their authority with non-Euclidean systems. It is declared that the number of geometries logically possible is infinite. All depends on the system of postulates adopted.[2]

With the crumbling of the old entities and the new rivalry among mathematical postulates, the foundations of physical theory are shaken. As for the biological sciences, their ultimate basis must lie in physics, and be shaken by the changes in physical theory, even as the flora and fauna of the earth's surface are disturbed by subterranean tremors. Yet plants and animals go on their ways heeding little of what is taking place beneath the soil, and biologists worry as little as possible about relativity and nuclei and electrons. They have troubles of their own

[1] See Burtt, *Metaphysical Foundations of Modern Physical Science* (1925), pp. 53 *sqq.*

[2] Émile Picard, *La Science moderne*, p. 74 (1908). Of course the non-Euclidean geometries are beyond me. I do not understand them, even after reading the kindly explanation of them in the second chapter of G. N. Lewis's fascinating *Anatomy of Science* (Yale Press, 1926).

from the complexity and trickery of living organisms, the unlooked-for behaviour of the phenomena of life.

It may be that biology has its own postulates, superimposed on those of physics. Biologist, as well as physicist, contents himself with seeking the *how* without looking beyond what Claude Bernard called " la cause prochaine ou les conditions d'existence des phénomènes." [1] Doubtless to-day " invariable antecedent " or some other non-committal phrase would be substituted for the word " cause ". As a general postulate the biologist might insist upon that which the same clear-seeing Frenchman called the absolute principle of determinism which he asserted no biologist could doubt—" un principe scientifique absolu. Ce principe est le *déterminisme* des phénomènes, qui est absolu aussi bien dans les phénomènes des corps vivants que dans les corps bruts." [2] This word has a rather different philosophical meaning in English, but I think the French savant meant by it that a given antecedent or condition or *cause prochaine* inevitably issues in the same resulting phenomenon. It seems to me a precise and specific statement of the fundamental scientific postulate or belief in an invariable or rational order in nature. It amounts to a claim that biology is or may become a precise science, like physics or chemistry. This is what biologists are working for. Yet a more instructed realization of the perplexing and unexpected conduct

[1] *La Médicine expérimentale*, p. 126.

[2] *Ib. o.c.* p. 84 and cf. p. 88, and pp. 106 *sqq.*

of organisms has since Bernard's time driven the worker to contemplate the possibility of more than one interpretation of his experiment. He might hesitate to affirm so unequivocally the unqualified determinism of organic phenomena.

There may be other biological postulates or imperfect inductions that apply only to living organisms. For example Harvey's *omne vivum ex ovo* and Virchow's *omnis cellula e cellula* (1855). The first may need qualification, since the growing organism takes much into its substance which could scarcely be said to come *ex ovo*. No exception might be taken to the second but that it dates from a time when the cell was imagined to be a homogeneous body, and of course cytologists are now trying to state specifically how the parts of the succeeding cells come from the corresponding parts in the parent.

There may be still another general biological conviction that every living organism has some quality besides its physical or chemical constituents, even though that quality be but a pattern or configuration. A living thing is not simply the sum of its tangible components. The succeeding and apparently related phenomena of a living organism conduce to the continuation of its existence and functioning. There is no need to endow such phenomena with purpose. With reason most biologists reject the crude term of vitalist. But they might well refuse to be called mechanists just because they work along the ways of physics and

chemistry. For they know that these neither explain, nor offer any prospect of explaining, the distinctive phenomena of life.[1] Then, as Dr. Whitehead says, how can anyone accept the crude alternative of vitalism or mechanism when there is at present no system of " well-attested self-consistent physical concepts . . . expressing the basis of all physical phenomena ".[2]

I pass on to the second leg of the impeachment—the fallibility of the data of observation and especially of that purposefully directed and confined and artificially controlled or modified observation which constitutes experiment. I am not competent to enter on this subject, having no working knowledge of the applications of " control ", or of the test through " contre-épreuve " which Claude Bernard describes thus : " La contre-épreuve devient donc le caractère essentiel et nécessaire de la conclusion du raisonnement expérimental. Elle est l'expression du doute philosophique porté aussi loin que possible. C'est la contre-épreuve qui juge si la relation de cause à effet que l'on cherche dans les phénomènes est trouvée. Pour cela, elle supprime la cause admise pour voir si l'effet persiste, s'appuyant sur cet adage ancien et absolument vrai : *Sublata causa, tollitur effectus.* C'est ce qu'on appelle encore l'*experimentum crucis* ".[3]

[1] Compare G. N. Lewis, *Anatomy of Science* (1926), pp. 160, and 194 *sqq.*

[2] *Science and the Modern World*, p. 145.

[3] *La Médicine expérimentale*, p. 89.

The phrasing of this paragraph might be changed to-day ; but the idea holds good. Perhaps one may say that the object of the " control " as well as of the " contre-épreuve " is to guard against the interference of irrelevant elements and especially against any fallacious *post hoc ergo propter hoc*. Nevertheless, though every care be taken with the experiment, uncertainty may creep in or hover on the fringes. Even the clear-minded Claude Bernard, whose life-work ended some sixty years ago, did not realize the perplexing intricacy, to the experimenter almost trickery, of the physiology of organisms, nor the baffling complexity in the conditions of environment. The most careful observation, the most painful winnowing of chaff from essential grain, cannot bar fallibility. There is always possible error in the data from which the scientist will draw his induction, or upon which he will reason mathematically. And the certainty of a science cannot exceed the certainty of its data, as Newton says in the letter already quoted.

The tale of uncertainty in the scrutiny of data and the import of experiment is disturbing. The famous Michelson-Morley experiment as to the terrestrial drag of the ether has been repeated and repeated, and the results lack uniformity. To account for the various aspects of the phenomena of light apparently two unreconciled theories are needed, the undulatory and the corpuscular. Such is physics. Experiment has proved more treacherous in the biological sciences, so distracting are the

growth and functioning of living creatures.[1] In such a composite science as geology, which includes both physics and biology, conflicting theories as to the manner in which the earth was formed, prevent fundamental certitude as to its growth and history.

If the data be uncertain, is greater reliance to be placed on the processes of reasoning from them? Error lurks in all forms of induction. Only favourable instances reach a certitude sufficient for practical purposes. Wider inferences, more remote and general in their bearing, remain fraught with fallibility. Is there certainty in mathematical demonstrations? Galileo and Newton may have thought so. But in the last hundred years mathematics has become sheer process, if indeed it was not always such. It carries no guaranty of correspondence with facts. It may feel assured of the validity of its procedure, granted certain postulates or axioms or attitudes. But as fundamental assumptions may be successively discredited, small comfort can be drawn from the mathematical reasoning based on them. Mathematics has so many ways of regarding the same problem.[2]

[1] See the address by H. S. Jennings, printed in *Science* for July 30, 1926.

[2] G. N. Lewis queries whether there is "any such thing as absolutely rigorous proof. Is not a proof only an attempt to render plausible new statements by correlating them with others that are already accepted?" He even suggests, perhaps speaking paradoxically, that "deductions of the unknown from the apparently irrelevant known seem to be the very gist of the scientific method" (*Anatomy of Science*, pp. 90 and 94).

It may be thought that the restriction of inquiry to the matter in hand conduces to surety in scientific observation and experiment, as well as in the conclusions drawn from them. The scientist may not stray afield. Yet prudence might suggest his looking beyond the immediate matter, even beyond his own province. He might discover further and perhaps counter considerations, and be led to doubt the truth of his conclusion, or at least to wonder whether it was based on all the evidence. Was it indeed the whole truth of the matter ?

An instance of the peril in limiting research to a single province—though a wide one—is seen in the result of the prodigious achievement of Galileo and Newton. They demonstrated and gave mankind a so-called material universe, in which the moving factors or causes were movement, mass, and force. It was an all-inclusive totality, beyond which there was nothing relevant, no pertinent power, to be taken into account. It did not admit mind to the company of its constituent factors or constructive causes. The very existence of mind was scarcely tolerable to this mechanically self-sufficient totality. So a mindless and somehow determined universe dominated the science of the coming centuries.[1]

[1] Recently its story has been luminously told—most brilliantly by Dr. A. N. Whitehead in his *Science and the Modern World* (Macmillan, 1925), and more circumstantially by Prof. E. A. Burtt in his *Metaphysical Foundations of Modern Physical Science*, *e.g.* p. 260 (Harcourt, Brace, 1925). Burtt's book serves as prolegomena to Whitehead's.

But now it has met with a two-fold overthrow: from an internal revolution through a new mathematical physics which has given to the winds certain Newtonian conceptions; while, as from without, it has been shattered by the assault of mind, which for long had but tremblingly asserted its autonomy as against this dark terrific shade. Mind exists. It is ourselves, or part of us. How shall beings with mind tolerate conceptions of a universe which leaves for mind no cosmic function? Mind has at last ejected these conceptions from among its furniture —and they had no other existence. Mind is the final arbiter; lately it has realized that the Newtonian universe was built of abstractions, which were illicit in that they were posing as realities.[1] And what satisfaction or appeasement can the mind gain from a universe that has none of the actualities and colours amid which we live and move and have our being?

V

Needed Corroborations

Science and its methods need the corroboration or criticism of other ways of reaching and confirming truth; and as a mode of human life and completion, science should be supplemented through other ways of living and functioning. From a humanistic point of view, and the view which I hold of values and validities, the grounds of the uncertainties and

[1] Cf. Whitehead's book, chaps. iii. and iv.

insufficiencies of Science resolve into the fact that neither its field nor its method permits the employment of all the faculties by which men grasp what is true and what is good for them. Science is of the intellect, yet proceeds through intuitions as well as reasoning, even the imagination helping. But the whole nature of man is far from being represented in this progeny of intellectual curiosity. Possibly other, even intellectual, faculties function in philosophic criticism, while still further yearnings of the spirit have place in religion, poetry, and art. These, for the full human life and grasp of truth, must supplement both science and philosophy.

I have mentioned the confirmation of science and its methods through the universal recognition of its beneficent results in the betterment of the conditions of human life. This is practical proof: science works. The acceptance by intelligent people of the validity and value of scientific research springs from a larger round of faculty and responds to a fuller measure of human functioning than had part in the investigations bringing these results. Instinct, intuition, reason, backed by the increase of material well-being, join in this popular acclaim. Perhaps some shy residuum of a spiritual sense of things still looks askance. Yet the general approval seems to have this best of sanctions that it is the verdict of many sides of human nature and not a conclusion of the intellect alone.

Philosophy may be looked to for a profounder criticism. It is the chief agent or procedure of the

mind seeking truths beyond the range of science and using intellectual methods that are not those of scientific observation and induction. Philosophy is ultimate rational consideration of furthest grounds and reasons, which science renounces. It responds to that part of man's intellectual nature which is not satisfied with the investigation of phenomena. The mind insists on seeking the foundations of things and soaring to the reaches of thought. There may be a broadening of the field of consideration, even a denial of all barriers. Scientific inquiry is scarcely affected by currents circulating beyond the matter in hand ; while philosophy, tending to universality because of the ultimate character of its search, considers all modes of truth, including those of religion, poetry, and figurative art.

Besides thus tending toward universality of consideration, philosophy consciously seeks the universal, or call it the general and fundamental.[1] It searches for general conceptions which shall prove logical and shall also correspond with the world of experience. Assuredly its conceptions and procedure must agree with experience and the inductions of observation if they are to be of service in testing scientific assumptions, methods, and conclusions. A philosophy possessing this agreement may legitimately criticize scientific postulates and fundamental concepts or entities. It may test them with respect both to their logical consistency and their correspondence with such further aspects of actuality

[1] *Post*, Chapter V. II.

and life as are needed for a satisfactory view of the world and man. The accord and relationship of one scientific concept with another would call for consideration; so would their universality or general applicability. Philosophy may also test the validity of scientific method or of any specific process or induction, and discuss the general bearing and validity of any mathematical demonstration. Scientific inductions may be compared by it, and tried out through the harmony or conflict of their conclusions. The final philosophic purpose would be, if possible, to universalize science and establish it in logical and necessary truth.

The method of philosophy is one stage further removed from the direct data of observation and experiment; it is a logical method, more sheerly and detachedly rational and belonging to the inner mind. Philosophy is more introspective than science, which is always adducing outer data, while philosophy clings to logical necessities. Thus it criticizes scientific results from another point of view. Science may thrust aside its criticisms, but its approval would be an additional support—as a calculation is proved through an identical result reached in another way.

On the other hand, scientific data and the inferences directly drawn from them, afford a means of testing the conclusions of philosophy. Philosophy will use them, since it is the nature of ultimate consideration to regard whatever test of its validity may be presented. But while science affords means

whereby philosophy may test its own conclusions, the scientific procedure moves in its own sphere, and does not engage in the criticism of something else. It is not the function of science to criticize philosophy, as it is philosophy's function to criticize science as well as other ways of reaching a conclusion or conviction.

Religion, poetry, and figurative art do not directly confirm or refute the conclusions of science. Another range of human stress and impulse finds expression in them. They represent modes of life which, in a complete human being, should supplement science and philosophy and may incidentally expose their limitations. Religion and art make use of reason and intellectual perception, and yet have sources in phases of human nature not usually regarded as intellectual.

Doubtless no single judgement will cover the varied fields and achievements of science. The practical value, the working validity of science, is before the eyes of all. Science has to-day its vociferously applauded innings. It triumphs in bettering the conditions of human life. Perhaps conditions only, since it is not the general opinion that human nature has been improved. Faith in science is still robust. There is advance, assuredly in the practically valid knowledge of the world of nature; possibly in fundamental theory, though here science touches philosophy and is affected by the difficulties inherent in all ultimate consideration. Man's mind is more effective for business than for the discovery

of truth. Men of science are in doubt as to fundamental conceptions.

One or two centuries ago, when science was more naïve than at present, its votaries were fascinated by their young inquiries and discoveries. They had little thought of analyzing either their tacit or their explicit assumptions ; nor did they stop to reflect whether their way of seeking facts was likely to lead to any certain goal. Now the scientific mind is developing awareness as to the character of postulates and postulated entities. It may discover them to be abstractions and conclude that they are not assured even as such. There has come profounder recognition of the uncertainty of scientific conclusions. Some scientists are tempted to seek further standards of truth. The scientific mind may bring itself to face the principle of ultimate consideration, which is philosophy. The two represent complementary intellectual tendencies, to wit, curiosity as to phenomena and insistence upon carrying thought to its last conclusion, whether that be knowledge or a satisfied despair. Surely both science and philosophy have part in the full functioning of man's intellectual nature. Each supplements the other. Is it not possible for them to unite in a more inclusive search for truth ?

CHAPTER V

PHILOSOPHY

I

"My" Philosophy

Meaning to make some slight return for all that philosophy has been to me, I will speak, if I can, of my philosophy and my estimate of philosophy's values and validities—all of which amounts to much the same thing.

I say *my* philosophy. For my thoughts, my mental and spiritual attitudes, are mine. My appreciation of art and poetry is my own, though I am neither poet nor painter. Still more closely my religion is mine, as every man's religion is his own, even though one or the other of us belong to some ear-marked sect. And my philosophy is mine, just as much as my religion.

Of course the elements, the constituent notions, or types of feeling where they enter, did not originate with me in the one case any more than in the other. Yet in me they become my reactions, and suffer change. Whoever is thoughtful or spiritual adjusts

to his personal equation whatever he accepts, and may add something from his own nature.

Contemporaries who belong to like social or educational groups are apt to think and feel alike in philosophy and religion. Naturally enough, having a common background, living under like conditions and usually holding uniform views upon the make-up of the world. Philosophic writings of the present day show mutual affinity, parallel approaches to the subject, and like conceptions of the task in hand. For myself when I have been thinking over a matter for a while and have reached some shaping of my thought through my own efforts as it seems to me, suddenly recalling another person's notions, or perhaps reading a fresh book, I notice the parallelism both of approach and conclusion. This struck me recently on reading a good deal of Bergson, although I can neither approve nor follow his reasoning. Everyone to-day seems to be thinking the same sort of thing, for example, about space and time, though trying to say it differently and perhaps imagining that he dissents from the views of his fellows. The most opposite of contemporary thinkers have more in common with each other than they have with their far-off predecessors—in religion or philosophy —with whom they would assert their agreement.

None the less, the identical necessities of human thought in all ages are shown in certain conceptions, which come rolling down quite unembarrassed by change of name or garb. An instance is the Platonic or Neo-platonic " world-soul ". As God, as plastic

Nature, as the *élan vital*, and what not else, the world-soul thrives. Most of us cannot get along without some such idea.

But now, due deference paid to the way we think alike and borrow from each other or our betters, I insist that each man's philosophy is his own, and that my philosophy is as personal to me as my religion—mine and no one else's. A man's philosophy is the total appeal to him of the surrounding world, as well as of himself to himself.

For example. As other thoughtful people, I like to travel a certain distance into the austere regions of the abstract. This represents the range of my dialectic nature, the limit of my personal interest. What is beyond is alien to my mind and temper. If I read Kant's *Critique*, I accompany that Olympian a while, and then my interest and my understanding begin to flag. I accept what I like of other men's philosophies, that is to say, only those parts which fit my own view of the world without and myself within, a view, to be sure, which constantly is growing and altering and may be modified by the very book I am reading. Even some professional philosophers understand only what they like.

All this is clear. You appreciate only what you can appreciate, and understand only what you can understand. Appreciation and understanding grow with education. Yet the mind, besides some general consistency, has mass and inertia. It is not to be moved suddenly and changed. Hence you do not understand what is quite alien to the total complex

of your views and wishes which form your nature at that moment. Your nature will not—to speak both literally and metaphorically—take it in. I know for myself that, if a train of reasoning is to have cogency for me, it must present some point of possible agreement with my temperamental attitude and the general make up of my mind, so that it may become mine. The argument must be such that it can become an organic part of my nature, which necessarily means my whole nature, all of me. For eventually it must be fitted to my impulses, chime with my feeling, as well as impress my understanding.

One's nature, one's mental processes, one's mode of reasoning, one's susceptibility to logic, are not quite as another's. Metaphysics is a personal equation. Also responsibilities differ. I may permit myself vagaries of thought which would be reprehensible in you, who may be a professional philosopher or teacher of philosophy. It is your business, if a philosopher, to build your thought into a consistent system, making it presentable ; and if you are a teacher of philosophy you must have a ready knowledge of present and past philosophies, that you may expound them and show the incidental causes of their advancing and ever broadening succession. Thus you give an edifying " course in the history of philosophy " to your students, and help some of them to become teachers like yourself. Both philosopher and teacher of philosophy must have qualities of the universal Buddha, Gotama

himself, who had not only reached enlightenment but could enlighten others.

But Gotama was to be followed by lesser people, not lights to all the world, yet who had reached enlightenment themselves. They might be little Buddhas whose light did very well under its own bushel. Such excellent individuals did not need to know all philosophies, nor need they make their own way of reaching wisdom quite safe for others. They had stumbled more than once over the roots and stones along their private paths, but knew at last how to step over them.

I am not even one of these, and certainly have no doctrine that could be taught, were it worth while, like great systems which could perhaps be taught, at all events have been taught and found of use. My philosophy, like my life, is a mere human document, infected with passing impulse and changing temper. I scarcely know what to say about it. It has never stood out separately from the rest of my life. Neither has my religion nor my morality.

My wise friend W. D. Howells once said to me that he always held the novel he was writing as a shield against unpleasant contacts. And I have found that whatever book I was working on and shaping in my mind held me like a bay of calm. Nowadays I dwell in my thoughts, and try to bring them to clarity and coherence. Thinking detaches me from personal anxieties. It makes me a free being. Amid the inordinate activity and immense material equipment of modern life,

I find it the more needful to possess myself in thought.

Thousands of excellent persons find their calm, or do not miss it, in the active world. Theirs is the active life. They may love their activities, which doubtless are needed by the world. My own philosophy or way of life is such as many men, but not multitudes, have followed. It also is a phase of human wisdom.

The philosophy of one as unoriginal as myself must be a personal amalgam of the thoughts of others. And since, as a student of history, I have sought for the best in thought and art, my philosophy has been a sort of sequential appropriation. It is my choice of truth. It represents the course of my greatly assisted self-enlightenment.

II

Ultimate Consideration

The questing intellect of man applies itself to every matter of interest, to think it out, and answer the question, what is it? how can I state it? is it so? The mind must turn to itself for its own final form of statement and criterion of truth. When the direct investigation of nature, that is, natural science, presses to the fore, the mind turns to itself for the final standards of validity—of the validity of the scientific method and its results. Likewise the mind considers human conduct, seeking an ultimate

rationale or system of ethics. And in times of religious fervour, the mind will attempt to co-ordinate and rationalize the matter of religious conviction.

Philosophy responds to the intellectual desire to think things out ; science responds to intellectual curiosity. As response to the desire to think things out, philosophy may be characterized as ultimate consideration, ultimate rational consideration of any problem pressing on the mind. When such consideration draws near to the solution or the conscious abandonment of a problem, it emerges into the stage of reasoned formulation or statement. Philosophy is ultimate consideration and statement, however one may conceive its subject, for instance, as very being or reality, or more richly as the quest of truth and life. While predominantly intellectual in function and method, philosophy does not limit itself to intellectual problems, and will consider any matter of deep human interest—science, art, religion, conduct, institutions. But it is ultimate on principle, while physical science usually disclaims consideration of final reasons.

Because of the ultimate character of philosophy, it tends to seek the general or universal, which is the fundamental and ultimate. Thinking means the generalizing of a sensation or perception, the putting it into a category, the turning it into a conception. But philosophy seeks to form universal ideas, which shall stand the test of dialectic and may correspond with some mode or sum of experience. These may serve as touchstones, standards of logical validity,

means of analysis, by which to distinguish the consistent, even the ultimately consistent, from the fallacious in all ways of seeking verity or fact. The ultimate and therefore universal tendencies of philosophy or, to use a trying word, metaphysics, stand out clearly in a renowned description which, however well or ill it has stood the criticism of the ages, is to be respected as a familiar ghost.

At the beginning of his *Metaphysics* the Father of things academic declares, "All men by nature desire to know". But what sort of knowledge constitutes the wisdom or *sophia* of which philosophy is the loving pursuit? Such wisdom is not sensation or any kind of crude experience. It is knowledge of the *why* of things, knowledge of causes and origins.

Aristotle leads up to the answer by pointing out that he to whom we ascribe wisdom, the wise man, *sophos*, would have knowledge of all things comprehensively, though not in detail; he would have that sort of knowledge universally applicable which shows the causes of concrete things. This kind of knowledge, being furthest removed from the support of the senses, is the most difficult; and only he who is pre-eminently wise would have it. Yet such knowledge is the most exact, since it relates to the first principles, which are the least complicated.[1]

[1] In translations of Aristotle the word "principles" is frequently used to render ἀρχαί. To get the force of this translation one should remember that even the English word once might mean "beginning", like its Latin parent *principium*: "In principio erat verbum," as the Vulgate renders

It is the most teachable ; for teachers are those who tell the causes of each thing. It is the most primary and knowable, because it is of causes and first principles, by means of which alone there can be knowledge of objects and effects. And it is this truest and most knowable knowledge which is sought for its own sake, and not because it is useful or productive of useful things. Therefore it is independent and free. But a knowledge of causes

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the opening words of the Fourth Gospel. The Greek, the Latin and the English word have swung through a like range of meaning. As Aristotle points out, Metaphysics, Chap. I., Bk. V. (Δ), ἀρχή in the singular, means beginning, origin, that from which a thing arises, and then the head man, magistrate or tyrant, at whose will things move (*princeps* in the Latin, *prince* in English). Then Aristotle's series of definitions swings toward our common use of the word *principles* : " That from which a matter first may be known is called the ἀρχή of the matter, as the hypotheses are the beginnings of demonstrations. *Causes* (αἴτια) are spoken of in an equal number of senses, for all causes are beginnings. It is common then to all beginnings to be that *first* whence a thing is or becomes or is known. And some of them are in the thing and some outside. Thus the nature of a thing is a beginning, and the elements and thought and choice and substance and the beautiful are the beginning of the knowledge and the movement of many things ".

The round of meaning attached to these Greek words and to the corresponding words in other tongues, indicates the many-sided adaptability of fundamental concepts as they transform themselves to meet another group of relationships. The human mind perceives affinity between *Prince* and origin or cause, and suggests it, metaphorically, by using the same word for both.

includes a knowledge of the final cause or end for which all things are done, and this end is the good in each thing and in general the supreme good in all nature. Therefore the knowledge of causes is the best and most authoritative.

In fine, this knowledge, which is wisdom, is a knowledge of first causes, to wit, those four Aristotelean causes (material, efficient, formal, final) which enter into the production, existence, and knowledge of everything in Nature. Through them things are what they are ; and through them likewise things are known to be what they are.

Perhaps this Aristotelean conception of philosophy is no longer appealing, and even the reasoning seems to have its breaks. Why, for instance, is the knowledge which is most knowable the most teachable, when, although the most exact, it is also the most difficult ? We are at a distance from Aristotle and his meaning, but may feel more at home in the following famous sentences.

" That this sophia is no productive science is plain even from those who first philosophized. For it is from wonder that men now, as at the first, begin to philosophize. In the beginning they wondered at things close at hand, and then little by little found themselves quite at a loss regarding larger matters like the changes of moon and sun and stars and the genesis of the whole universe. . . . Since they philosophized to escape ignorance, obviously they pursued knowledge for the sake of knowing, and not for some use to be made of it. The circumstances

prove this. For it was when the necessaries and easements of life had been won, that such wisdom began to be sought. Plainly then we seek it for no other use. But as we call a man free who exists for himself and not for another, so this is the only free knowledge ; for it alone exists for its own sake."

Aristotle approaches his subject of metaphysics or philosophy from another angle. " It is right ", he says in the first chapter of the second book, " that philosophy should be called knowledge of the truth. For the end of theoretical knowledge is truth, but of practical knowledge, work. . . . But we do not know the truth without the cause. Now each thing surpasses others in so far as they derive like qualities from it : as fire is the hottest of things, since it is the cause of heat to the others. So that is most true which causes those next in order to be true. Therefore of necessity the principles (*ἀρχαί*) of eternal things will eternally be most true. For they are not true occasionally, nor is there a cause of their existing, but they are causes for the others. So that as each thing stands in respect of being it stands in respect of truth ".

I let this paragraph go in a bare and none too sure rendering. To explain might be to distort its meaning. An extract from the first chapter of the fourth book gives still another aspect of the subject : " There is a certain kind of knowledge which contemplates being as being and what belongs to it as such. Now this is not the same as those sciences which are called partial [special] ; for none of these

others deals generally with being as being, but, cutting off some part of it, they investigate what belongs to this part, like the mathematical sciences".

Being as such, or rather that fundamental mode or category of being which is substance (*οὐσία*), is the main topic of the Metaphysics. Substance is that of which all other categories may be predicated, but it cannot be predicated of any subject, save pure being itself. It is that which simply and primarily *is*, and not that which is something. Each of the other categories or predicates is in virtue of this category of substance. And "our inquiry is as to substance: for the principles (*ἀρχαί*) and the causes (*αἴτια*) which are sought are those of substances".[1]

Supreme among substances is the final cause, the absolute Good, an eternal, immaterial thinking substance, itself unmoved, but moving the heavens eternally through their desire of this final cause and Good, which is God. The object of desire and of thought, unmoved, moves all things in this way.

I have given but a truncated suggestion of Aristotle's way of approaching the ultimate problems of reality and life. The metaphysical construction was his, yet it carried on the Greek philosophic tradition; as the thinking of any of us must spring from given points of departure, and carry on its past. This thinking of Aristotle, his philosophy, is sheer metaphysics, cut loose from the direct investigation of sensible phenomena and seeking ultimate verity.

[1] The last sentence is the first in Bk. XII. (Λ).

III

Philosophy's Historic Task

The nature of philosophy's method, as applied primarily to intellectual problems formed and analyzed within the mind, was spoken of in the last chapter but one. Its method, however, does not bound its scope. Any topic of thought and feeling may press for ultimate intellectual consideration, and demand from the philosopher his profoundest thought. Yet some topics are more sympathetic to the philosophic mind and better adapted to philosophic treatment. Phases of rational endeavour, especially of endeavour after truth, can thus be tested. But philosophy may be baffled, or reach but foolish judgements upon those human activities whose moving energies are feeling and imagination.

When I try, in the next section, to state my view of philosophic value and validity, perhaps it will appear that philosophy may profitably pay regard to the evidence or the convictions of irrational psychic processes. The life of a man or woman includes, if it does not unite, both the rational and irrational. But life is broader than philosophy, and it is hard for the reason to appreciate either the testimony or the impulses of feeling.

Impelled by its own nature, which flows from the mind's importunity, philosophy perseveres in its task. Recognizing the insistency, or, it may be, the imperative validity, of its own rational procedure,

it endeavours to apply its methods of ultimate consideration and analytical statement to whatever convictions for the time meet general acceptance among thoughtful men. Through its dialectic it will test these convictions, reject some of them, and present in rationalized or universalized form those which it can accept. Thus it constructs a system.

A system of philosophy cannot avoid reflecting the dominant intellectual or spiritual interests of its epoch. The more creative the master mind who forms the system, the more genially will he use the elements of his time. No mind can lift itself altogether from the knowledge and spiritual interests which cradle it. It cannot fail to be stamped by them, or interested or intrigued. If an outstanding genius find phases of contemporary thought repellent, his mind, for that very reason, will rebound at an angle and fly in a direction that it would not otherwise have taken.

The history of philosophy, which is philosophy in its self-evolution, illustrates the genial fulfilment of its historic role, which is to apply its methods of ultimate consideration and formulated statement to the various topics of absorbing interest which successively have pressed upon the mind.

My illustrations might open with the Indian Upanishads, which fashioned into a metaphysical system the detestations as well as the ideals of thoughtful Indians. Through a prodigious dialectic these compositions created an Absolute as a longed-

for refuge from an execrated world of change and death.

Gotama's dissenting reasoning could find no absolute. Yet a similar view of life and like temperamental needs impelled him to construct an equivalent goal in Nirvana. Buddhism, like Brahmanism, was a system of religion and ethics as well as a philosophy.[1]

Our ancestral friends, the Ionian Greeks, took account of the knowledge and varied interests of themselves and their keen-minded countrymen. They philosophized regarding the phenomena of the natural world, and came to large conclusions. The line leads on, say through Parmenides and Pythagoras, Heracleitus, Anaxagoras, and Democritus, to Socrates, Plato, and Aristotle.

Socrates was the most philosophical of his own Athenians, who loved to discuss with him the things his and their minds were busy with. They were fruitfully seeking a better method of thinking and clearer ideas. No more than Socrates was Plato detached from the intellectual world of which he was the star. He knew the philosophies before him, and the mathematics and physics of his time. The knowledge and intelligence of others winged his own flights of thought. Still more palpably the system of Aristotle embraced contemporary and past intellectual interests ; and each volume, small or great, in his Encyclopædia, was in some way a fosterling of the intellectual world about him, however directly it was the offspring of the Stagirite. More notably

[1] Cf. *Ante*, Chapter II. II.

than any predecessor, or any successor for that matter, he fulfilled the philosopher's task of constructing a rational system, or systems, out of the intellectual elements of his time, to which his own thoughts and researches contributed. Both Plato and Aristotle gave full thought to the question of human welfare, the *summum bonum* for man. They rounded out their philosophies with this final consideration.

A period followed when men were much concerned with their lives, which they could not control. They sought escape from the assaults of Fortune. In a world of ageing enthusiasms, philosophy lost the spirit of intellectual discovery, and set itself to secure a happy life for the philosopher. Stoicism rationalized and made firm the spiritual freedom and peace which man may find within himself, in character and strength of will, and in virtue which consists in rational thinking and acting. Philosophy became in Stoicism an adjustment of human conduct to a definite view of man and the world in which God had put him. The system of Epicurus was also sheer adjustment, with less serious endeavour to base its practical principles upon knowledge of man and nature. Both systems endangered the progress of ethics, with which they more vitally were concerned. For whenever the quest of knowledge weakens, ethics loses the enlarging basis needed for ethical advance. And the soul's calm is won more surely through the full employment of the highest energies of the mind.

It was a time of growing cosmopolitanism. Stoicism accorded with what was good in this tendency more strongly than Epicureanism. For Stoic virtue was benevolently social. The wise man knew himself a citizen of the world. Fulfilment of his private and public duties helped to insure his calm.

But again the times were changing, as the world entered upon what is sardonically called the Christian Era. Men were looking for divine deliverance from earth's unstable dross. Embodying phases of the later Stoicism, Neo-platonism gathered to itself the yearnings of the pagan world. It was a philosophy, indeed a strenuous metaphysic. It drew into its system much of the period's spiritual strength as well as need, the intellectual power of the time and its prevailing conviction of the intellect's inadequacy. Neo-platonism justified its descent from Plato by its catholic purpose—intellectual as well as religious. It would bring the disciple to complete and final well-being. This should be won through strenuous thinking and through holy living, the soul holding itself aloof from the evils of the world and set upon its return to the Spirit whence it came. The rarer summit of salvation was mystic union with the final source of life—an intuition of the Absolute, a passing taste of eternity, the soul loosed from the bonds of time and locality.[1]

[1] " There is no Greek philosopher who did not intend to be an ethical teacher ; and in Plotinus the fusion of religion, ethics, and metaphysics is almost complete. He must be studied as a spiritual director, a prophet, and not only a

Plotinus's system met the needs of much beside sheer intellect in man. Yet the intellect was not degraded from its high estate. Its processes were not deflected from their dialectic goal, nor made the servants of ethics or religion. The higher Neoplatonism pursued a mystical metaphysics uncontrolled and unimpeded save by the insistent functioning of the entire mind—the full psychic nature of Plotinus and the period producing him. The mind of Plotinus, the mind of his epoch, could not find rest in the intellect alone. Possibly Plotinus's mind had its further spiritual anxieties—the time had an abundance of them. At all events Plotinus craved the full life of the spirit. He was more clingingly and needfully religious than Plato. And in harmony with his great forerunner, he was intent on winning through to goodness and beauty as well as truth.

He sought reality along the ways of his Athenian master. To both of them Spirit was the real. Reality, Being, the truth which corresponds to it, Goodness and Beauty also, were children of the spirit. They must be real in terms of what is

thinker. His is one of the most ambitious of all philosophical systems, for he not only attempts to unite and reconcile what was best in all Greek philosophy, but he claims to have found the way of deliverance and salvation for the soul of man, in whatever circumstances he may be placed. And, as he is never tired of telling us, we can only understand him by following him, and making his experience our own. The quest is for him who will undergo the discipline and follow the gleam." Dean (N. R.), Inge, *The Philosophy of Plotinus* (Gifford Lectures, 1917–1918), vol. i. p. 7.

most excellent, and most excellent for man, whose soul partakes of the reality of spirit. Thus they are real and valid in terms of stable spiritual values. Reality and validity and value become aspects of each other. One may imagine the supreme values, Truth, Goodness, Beauty as co-ordinates which serve to fix the attributes of Spirit in terms comprehensible to the human mind.[1] So a union is achieved between metaphysics and that part of philosophy which is called Ethics ; and again the two embrace or are embraced by the concept of God as the Giver as well as the Standard of all values and validities. The path is open to religious feeling and motion. For the seer there is the mystic vision coming as the crown of thought ; and for those who are not seers there is ritual and mystery-cult of myriad gods and, when needed, the aid of magic against demons.

Following hard on this pagan philosophy came the philosophy or theology of the Christian Faith. It absorbed many elements of the Neo-platonism which it supplanted. The first stage was the formulation of the Creed and further authoritative dogma. It was a process of rationalization and at the same time an adaptation of the Faith to the precise apprehension of a world educated in Greek thought. This work, primarily of the Greek and then of the Latin Fathers of the fourth and fifth centuries, was assuredly an application of philosophic consideration and ultimate dialectic to the main

[1] Cf. Dean Inge, *o.c.* vol. ii. pp. 74 *sqq.*

intellectual and spiritual interests of the age, and a rationalized expression of them.

A second stage of this philosophical theology is found in the further systematization and explication of dogma by the great Scholastics of the Middle Ages. The ninth and tenth centuries rearranged the patristic matter, and sharpened certain points of doctrine. Through the periods following, the patristic material was worked over, its problems thought upon and disentangled into more explicit statement. The treatment becomes more reconstructive, and a larger knowledge of Greek philosophy is recaptured from the past and utilized in this procedure. The antique leaven is for a while mainly Platonic or Neo-platonic ; then comes a fuller use of the logical writings of Aristotle ; and at last in the thirteenth century the substantial philosophy of the Master is applied to the systematization and rationalization of the dogmatic scheme of Salvation, and, so far as may be, is worked into it. Thus the great constructive *Summa Theologiae* is achieved in its serried syllogistic structure by Albert and Thomas. It was an all-embracing exposition of God, so far as He might be known in His Unity and Trinity ; of the corporeal and incorporeal world created by Him, and especially of man, his two-fold nature and his qualities ; of the manner of human and angelic cognition ; of man's relationship to God and final destiny. All was presented in its bearing on Salvation.

The *Summa*, that is the *Summa Theologiae* with its

auxiliary *Summa contra Gentiles*, was a complete formulation of the supreme spiritual and intellectual interests of the Mediaeval period, and thus for that time a true fulfilment of the function of that ultimate rational consideration which is philosophy.[1]

The kind of curiosity which results in science was not strong in the Middle Ages. Not Roger Bacon, but Albert and Thomas and Duns Scotus and Occam represent dominant intellectual interests. Their thinking was masterfully set upon the logic and metaphysics of the ways of God with men. Through such far distance glasses they usually looked at the phenomena of Nature. To some of them the natural world, with its living contents, was essentially a symbol of the divine means of salving the souls of men. Thomas sees both sides, and lays down the rule that theology takes natural phenomena symbolically, while secular philosophy considers creatures according to their own nature. His master, Albert, was addicted to botany and zoology, though largely as a translator. He liked to discuss hidden qualities of plants and animals and abstract problems concerning them. In fine, theology, with the philosophy and knowledge clothing and supporting it, remained the dominant intellectual interest of the thirteenth century ; and there was no such living fund of natural science, or ardour in its pursuit, as to require the dominant philosophy to consider it seriously.

[1] The Church Fathers and the Scholastics are referred to from another point of view in Chapter II. II. *ante*.

But in the centuries following the Middle Ages an insistent curiosity as to nature thrust itself and its new-found validities upon the attention of philosophy. Thereupon the more progressive phases of thought set about comprehending these new tendencies and their advances in knowledge, which might offer a new view of the universe. A chief business of philosophy henceforth was to test and rationalize and systematize them.

In the fifteenth century Nicholas of Cusa offered a possible solvent of scholasticism through his principle of *docta ignorantia*, or instructed ignorance, which cast judicious doubts upon the human capacity for absolute truth. Turning to physical speculation, he found the universe in motion, including the earth, which he would no longer regard as the centre of the world. He brought to the fore problems of physics and mechanics, and made observations and experiments.[1]

Cusa's reasoning might help to prepare men's minds for the coming revolution in astronomy. And Leonardo, born a little while before Cusa's death, took up the consideration of the rolling world, and became insatiate in physical and anatomical investigation. Not very long after he died there appeared in one eventful year, 1543, the *De Revolutionibus* of Copernicus and the *Humani Corporis Fabrica* of Vesalius. Intellectual men were henceforth to interest themselves in astronomy, physics, and biology

[1] Cf. my *Thought and Expression in the Sixteenth Century*, ii. pp. 284 *sqq.*

as they had not since the days of the Alexandrian physicians and astronomers two or three centuries before Christ. I spoke of these matters in my last chapter, and have here but to point out that philosophy quickly turned to the new knowledge ; and in its role of ultimate rational consideration, set itself to criticise and aid. Cusa's revolt against scholasticism was carried through, and philosophy shook itself free, not indeed from the teachings of the Greeks, but from slavery to their authority. The greatest Greeks had differed in opinion. Humanists and philosophers of the fifteenth and sixteenth centuries would now set the august form of Plato against the assertions of his pupil ; and in time the views of the Atomists and even the Eleatics were brought forward and compared.

A surging and magnificent confusion pervades the thinking of these new philosophers—Telesio, Campanella, Bruno, all south Italians. They felt the rising wind, and set their faces toward the future. Theirs should be philosophies of Nature—the great infinite Nature and the God of Nature, whose action and energy swept through the Universe. Our celestial voyagers spurned scholasticism ; and if they made no sure use of tested basic principles, many a bold thought, at least of Bruno, was to win confirmation long after his tragic death in the year 1600.

Francis Bacon (1560–1626) follows close upon them. His philosophy, futile in much of its specific content, was inspiring in its purport and envisage-

ment. So far I have scarcely mentioned his great namesake, Roger Bacon, because I am keeping to dominant currents, and the work of Roger did not fall in with them. It might have, had he lived when Francis more fortunately saw the light. Who has not been struck by the startling affinity between the two, which pervaded alike their torrential denunciations and their constructive schemes. The older man was for his time the better scientist. The younger would not recognize the new discoveries—the circulation of the blood, " the diurnal motion of the earth, which [he was] convinced is most false ", even after he knew of Galileo's discovery of the moons of Jupiter and proof of their revolutions.

Both Roger and Francis set forth an experimental and inductive method of reaching the whole truth of Nature. Roger's *scientia experimentalis* fell dead ; Francis's method was unworkable. But the spirit of his time spoke in his prodigious plan " to commence a total reconstruction of sciences, arts, and all human knowledge, raised upon the proper foundation ". That spirit found voice again in Bacon's words touching man's noblest ambition to " extend the power and dominion of the human race over the Universe " ; an empire which " depends wholly on the arts and sciences. For we cannot command Nature except by obeying her ".

" Philosophy " should pause, apparently thought Bacon, until " an approved and careful natural and experimental history be prepared and constructed ", an encyclopædia of all knowledge. That indeed

was to be partly accomplished, not through any work of this inefficient observer and credulous compiler ; but through the efforts of men inspired by the spirit of science, which had found eloquent voice, though not exemplification, in Francis of Verulam. His mission was to lead philosophy to include and consider the entire encyclopædia of natural knowledge.

Descartes, younger than Bacon, a more consummate metaphysician and as good a scientist, lays stress upon the practical and scientific purpose of philosophy. " All philosophy is a tree, of which the roots are metaphysics, the trunk physics, and the branches springing from the trunk are all the other sciences, which are comprised under the chief heads of medicine, mechanics, and ethics." [1]

Being a philosopher, Descartes relied primarily upon *a priori* reasoning for the discovery of truth ; yet his knowledge kept abreast of the physics of Galileo and the physiology of Harvey ; and he strove to bring the reality of facts within the logic of ideas. His younger contemporary Pascal (1623–1662) was more effectively drawn within the experimental currents of the time. Mathematician, philosopher, theologian as he was, he was incited by the work of Torricelli to test the pressure of the air at the base and summit of a mountain. Through actual experiments he discovered certain laws of hydrostatics and the principle of the hydraulic press.

[1] Preface to *Principia Philosophiae.*

Thus evidently when science raised its head again, and asserted its claims, philosophy quickly addressed itself to consider them, even as it had always striven to give rational form to other master interests in other ages. Accordingly, with the advent of a novel rush of intellectual interests in the sixteenth and seventeenth centuries, philosophy broadened to include them in its view. Hobbes and Locke may revolt from metaphysics in the older dogmatic sense, but all the more they seek to consider the realities of human life and thinking. The philosophic task is recognized as embracing the whole nature of man and his various achievements, his psychology, his ethics, politics, religion,[1] as well as his way to knowledge through the direct and experimental investigation of natural facts. "The proper study of mankind is man" and all his interests.

Mathematics, including its sweeping application to physics, had been drawn into philosophy with Descartes, under the impulsion of his own genius and the incitement of Galileo's achievements. An equally great mathematician, Leibniz, sought to join mathematical and mechanistic conceptions of the world to a teleology leaning toward religion. Natural science must be harmonized with man's

[1] Early in the eighteenth century in England philosophic thought addressed itself to the rationalization of religion, though following a less dogmatic path than that of the Scholastics, as one sees, for instance, in Toland's rational deism, in Shaftesbury's reasoning enthusiasms, and again in Hume's *Natural History of Religion.*

insistent aspirations. The endeavour of this omniscient thinker was prophetic of the immense role to be taken by the conflict between mechanism and teleology in modern thought, scientific as well as philosophic.

Yet that mathematics was not philosophy might appear in the difference between Descartes's fundamental certainty springing from intuitive consciousness, the *cogito ergo sum*, and Galileo's search for elemental or indicative magnitudes, to serve as methods of statement and means of measurement for the movements of the Universe. Immanuel Kant was to render sharp and explicit this difference between mathematics as a science of rationally and necessarily constructed magnitudes, and philosophy as a system of ultimate conceptions.

It was through mathematics and physics that Kant passed on to his final vocation of finding an ultimate basis in critical thought for a consistent treatment of the natural world. The first production of this youth of twenty-two, in the year 1746, set itself to point out the faulty methods of Leibniz and others in physics and metaphysics, and show the need of a true metaphysics for the solution of the problems of physics. This was followed a few years later by the " Essay on the Constitution and Mechanical Origin of the Cosmos (*des ganzen Weltgebäudes*) treated in accordance with the principles of Newton ". Newton had explained the movements of heavenly bodies. Kant would explain the origin of these movements. To this end

he presented the first statement of what is called the Nebular Hypothesis. His was a tremendous vision of the physical Universe in its immeasurable greatness and beauty, yet apparently moving on to physical exhaustion. But in the infinite prodigality of Nature the destruction of worlds or the creation of a Milky Way is but a circumstance, and the happy soul may watch from an immortal height the tumult of the elements.

In order to provide an assured foundation in ultimate thinking for this or any system of physics, Kant set himself to solve the problem, how do we know?—or, as put in his famous symbol, how are synthetic judgements *a priori* possible? Thus, from a mathematical physicist, he became a metaphysician. He was occupied with universal forms of thought, also with the limitations of rational thinking. Men must look elsewhere for assurance of God, of freedom, and of immortality. Kant's arguments, and the bounds set by him to their efficacy, pressed on to ethics, law, religion. They became stamped with the profundity of his ethical and religious feeling.

Afterwards, with Schleiermacher and others affected by Spinoza as well as Kant, a philosophy suited to the temperaments of ardent men applied itself to religion and art. In Goethe's Germany Spinoza exerted an influence second only to the critical philosopher who pierced his system. Also after Kant, Fichte and Schelling, soaring to heights of romantic idealism, were assuredly ethical, but too

strongly repelled by the mechanical views of science to consider its data seriously.

Then Hegel. He was no physicist. He did not actually work with the data of natural science, the method of which he deemed inchoate and defective. Yet its empirical results were to be recognized and drawn within the ascending spirals of his philosophic thinking. In the vast extension of his system he sought to include, interpret and construe, the whole volume of past and present thought in its continuous evolution. History was no record, but a self-evolving *continuum*. *The History of Philosophy* was the organic process of ultimate thinking : it was the time-genesis and progress of thought finding and producing itself in cumulative systems. *The Philosophy of History* was the rational unification of whatever might form a subject of thought. As the progressive process of the Spirit, thought's upward eddying spirals were all-embracing. Of course, religion entered the Hegelian scheme.

The hundred years which have elapsed since Hegel's death have delivered the world over, not indeed to reason, but to science. Philosophy has sought to include the results within the scope of its consideration. It has tried for this, whether repelled by science, or itself aping laboratory methods. In France philosophers have been partial scientists—the line of Descartes, Pascal, the Encyclopedists, Compte, Renouvier, and Bergson tells the story. In England Herbert Spencer was as much of a scientist as a philosopher. So William James in America.

And to-day, synthetically and profoundly, philosophy, which is still ultimate rational consideration, is considering the validity of the methods and conclusions of physical science. It is seeking to accommodate and harmonize these methods and conclusions with the totality of human experience and conviction. It is even seeking to bring to bear on science philosophy's own enlarging relations with the validities of art and religion. For it wishes to include in its ultimate verdicts the evidence of human faculties which seem to function beyond the pale of the discursive reason.

IV

Philosophy's Validity and Value

The readiness of philosophy to apply itself to whatever problems the thought or temper of an age may thrust upon it is the more palpable phase of its adaptability and inclusiveness. A complementary mode of catholicity may or may not inhere in the philosophical process. Does the intellect act alone, or are other psychic qualities or faculties admitted to influence the conduct of the dominant intellectual factor?

This question seems to me bound up with that of the human value of philosophy and the validity of its conclusions. Touching this rather manifold subject, I must try to think consistently along the lines of what I said in my first chapter of values and

validities as human functionings or realizations of one's self.

The values or pleasures of philosophy are distinctly human, while its validities are of the highest import for men, provided they are valid and offer truth that can justify itself from the records of human experience. It is for the mind to marshal those records and, while summing up their evidence, give heed to the voices of its own many-phased and diversely functioning nature. The mind judges through its intellectual faculty ; but only as feeling and intuition enter and concur will the judgement carry more than partial human truth.

The mind seems to me a manifold unity of psychic function. I do not find in it distinct faculties but various phases of function scarcely commensurable or admitting of a common criterion, yet indistinguishably rooted in a personality. What the mind apprehends through one mode of experience or apprehension, is not easily comprehended or tested by another. Feeling or emotion, intuition, the analytic and discursive reason, are different psychic functions. Frequently they mingle in joint action. But not always, since the same man may either weep or botanize on his mother's grave. He is one person, but effectively various according to the activity of one or another psychic process. One process does not readily cope with the data of another ; nor are the values and validities of the one and the other easily compared. What is called the intellect or reason finds difficulty in analyzing or testing that

which enters the mind or reaches consciousness, in the guise of feeling. Being but one process of the mind, the intellect cannot grasp the mind's totality or the unity underlying its diversity of function. No single psychic process or function can, in any sense of the word, *comprehend* the whole of the mind or psyche. For this reason I cannot be said to *understand* the manifold oneness of my mind. Perhaps the body also has a feeling or sensing or intuiting, which still may be a process of the whole psychic and physical nature.

The reason or understanding as the investigating and intellectual function is the one most given to considering the other processes. This does not prove its competency. If I have said that in thinking I became a free being, I may be hard put to prove it by my logic. And this not merely because of the terrific array of considerations *pro* and *con*. An obstacle lies in the manifoldness of the mind, of which reason is but one process. How shall that single logical function understand and demonstrate the freedom of the mind in the range and totality of its functions—the freedom of the mind whose unity the reason cannot even comprehend? It is better to fall back on the direct consciousness or intuition of freedom and personal responsibility. Reasonings seem as light impertinences before the strength of this conviction,[1] which

[1] A related question which logic has not solved is whether one ever acts unselfishly. The whole nature of man is to be included if one will answer this, and the different phases of

is as resistless as Descartes's basic certitude of *cogito ergo sum.*

There is yet another point. Everyone recognizes nowadays that the phases of the mind extend beyond consciousness. Consciousness is neither co-extensive nor synonymous with mental activity or psychic functioning. Much goes on in our unconscious states. I admit this fully. But how we are to know what goes on I cannot see, except by comparing our states of consciousness—or perhaps vanishing and dawning consciousness—before and after the assumed intervening unconscious period. Such comparison may assure us, for example, that the clarified thought which springs to consciousness after a period of dormancy, so far as concerns the subject of this thought, has somehow taken form in the meanwhile—we know not how.

I see no ground for assigning these unconscious processes to one mode of psychic activity rather than another, except, again, from considering the character of the mode—feeling, intuition, or intellection—which appears to have been added to or developed unconsciously. One may reflect, however, that reasoning is a linked process, and commonly each link is connected with a prior conscious link or state of consciousness. Feeling and intuition seem to

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it which may operate. Every action for another's sake fulfils some part of the actor's nature, is a functioning or realization of some part of it. The function acting may be reason calculating the doer's own benefit, or may be a loving impulse to save another.

spring up more suddenly, without conscious linkage with an immediate antecedent. This leads me to suppose that the unconscious, but somehow efficient, states partake more of feeling or intuition than of reasoning.

I have still another notion to refer to—rather loosely—" common sense." The term has had a long and chequered career. Often it has been lauded, but again it has been hit hard by philosophic or analytic thought. I use it here to suggest a sort of co-operation, not an entity. There may be co-operation among the different phases of the mind, when the impulses of feeling and the convictions of intuition amicably co-operate with the dictates of reason, to check or modify what otherwise might have been the outcome or conclusion of some one of these psychic processes. The result may be as sound and represent quite as broad human truth as the more analytical procedure of reason acting along its own lines, or even when taking account of the data of the other psychic processes and endeavouring to weigh them in its own scales. In the procedure of common sense, as I would understand it, all the psychic processes assist in reaching a rough, but broadly human, conclusion. This may be less biased than when reason alone does the weighing. Perhaps these loose expressions give some idea of the co-operation of the phases of the mind.

My thought of the mind, and of reason as its intellectual process, is the basis of my view of the validity of philosophy. So far as a philosophy, or a

philosophic conclusion, is the product of reason alone (if this be possible) it carries no assurance of representing all the truth that man is capable of. The conclusions of reason have but intellectual or logical or abstract validity. Intuition, feeling, instinct contribute their convictions to the totality of experience, apprehended fact, entering the mind. These data must be saved and taken account of. But the reasoning faculty or intellect has difficulty in appraising their weight, so great is the disparity between the intellect's rational and perceptive understanding and the apprehending or experiencing processes of other psychic functions. Nevertheless it belongs to the intellect to consider the data as well as the conduct of these other functions. It may even look to them to supplement and confirm its own conclusions. Through this procedure the intellectual conclusion may be enlarged or modified. Philosophy, which is in the main an intellectual process, may thus enlarge its conclusions and gain for them a fuller human confirmation.

The systems of philosophy which have handed on convictions of abiding interest have taken account of the data of human functions other than intellectual, and have looked to such for confirmation of their own conclusions, or have been troubled at the lack of harmony in the evidence. So these systems have added to their scope and human validity, though possibly impairing their narrower logical consistency. Modern philosophies more consciously have analyzed and recognized the

claims of the irrational functions of the psyche. Yet in spite of such painstaking recognitions, they may seem less humanly catholic than the old systems that were quite innocent of laboratory ways, but instinctively realized the value and validity of all phases of human functioning.

Thus the old philosophies, of which I am thinking, proceeded in a natural way. For a philosophy can hardly be of the intellect alone, since usually or naturally no function of the mind is isolated in its action. Perhaps no psychic activity leaves unemployed, or at least undisturbed, the other phases of the mind, although clearly some one function is dominantly and consciously active. Intense and purposive thinking, for example, is desirous and conative or resolute. Therefore it is tinged with feeling and emotion, and is doubtless guided, or perhaps impelled, by intuitions.

Let me offer some broad illustrations. Political institutions, the ways of human conduct, the convictions of religion, the creations of poetry and the figurative arts, are not the fruit of the intellect alone. Intuition, impulse, feeling, passion have worked their wonders in them. I have tried to outline these factors, which do not lend themselves to definition. They seem to fall into a different psychic category from reason and the intellectual perceptions which supply its data. I can define no psychic process to my satisfaction. Yet defining seems more plausible when concerned with rational thinking—which is the defining agent. But as soon as I think of

intuition, impulse, feeling, I recognize (that is, my intellectual faculty recognizes) the futility of any attempt to form a clear conception of these psychic states or experiences.

Yet they are real and vivid, and may be convincing, overwhelming. They are the moving energies of our acts, even of our intellectual acts or thinking. With religious and artistic natures they are efficient, constructive, creative. They draw the intellect to their service, and the joint product may embody principles of conduct and enunciate verdicts of life and truth. I shall try to show this in chapters to follow. Anticipating their arguments, I say at once that the convictions of religion, and the works of poetry and the figurative arts may express broader truths than the intellect alone can reach. And here I conclude that, according as a philosophy embraces the whole volume of psychic evidence, its arguments will be the richer in content and more representative of human truth.

Further than this, just as great systems of philosophy have supported themselves upon all the activities and convictions of the mind, so they have kept in view the satisfaction of human nature in its totality, while honouring above the rest whatever was most distinctly human. The search for wisdom remains for them the supreme motive, and the attempt to reach ultimate truth. Knowledge is sought for the satisfaction of knowing. It may be that the chief happiness consists in the action of the intellectual faculties. Happiness is in the quest,

and happiness in the knowledge won. But with the great philosophers, the sought-for goal as well as the happiness of the pursuit transcend the intellect. Pursuit and goal alike embrace the man's whole happiness and peace. Philosophy may love the object of its thinking, and rejoice in its perfections. It will draw close to the rapture and uplifted solace of religion.

Philosophy will thus include ethics, the directly practical philosophy of life. Society's needs, the principles of conduct, call insistently. When once the philosopher listens, they may call too loudly, and distract him from the sovereign inspiration of his purpose, which is ever the pursuit of knowledge worthy to be loved for its own sake. Conduct, and the lively motives of bodily and spiritual satisfaction, are obstreperous in their demands for useful knowledge.

But still a true philosophy upholds ultimate knowledge—thinking things out to the last conclusions of the mind—as its primal aim, convinced of the supreme value of such thinking in a scheme of life. Beneath this primacy other knowledge is to be ordered according to its worth and usefulness. Such a philosophy will hold life whole, as in the thought of Plato. For him wisdom was no thing apart from life, nor to be sought with a view to any close advantage, or as a mere guide of conduct. The love of wisdom remains life's formative faculty, identified with the love of all that the intellect may deem good and beautiful.

My argument, such as it is, leads to the twofold conclusion : according as philosophy admits to its activity other faculties than the strictly intellectual, it will enlarge its truth and at the same time give more manifold human happiness to its disciples. It may thus teach a man how best to spend his life.

v

An Illustration : Spinoza

Accordingly the life of the philosopher brings happiness from many, even emotional, sources, as the happiness of contemplation passes into the bliss of love and perhaps the rapture of vision. Conversely it may evoke and use every function of the mind ; and its unified conclusions, if it attain such, may seem to base themselves on some concurrent judgement of the round of human faculty. In such a system the ultimate problems touching being and its attributes embrace ethics and relate themselves to religion, which is another approach to the Source of being and the Source of values and validities for men. This had been so in the philosophy of Plato ; it was so with Aristotle, so with Stoicism, and so with Plotinus. It is also true of Spinoza, whom I take to illustrate the inclusiveness of philosophic thought and life.

Spinoza is one of our closest kin, our intellectual elder brother. One would not call his metaphysical system either a practical, that is ethical, or a religious

philosophy. Because it is mainly an intellectual consideration of ultimate problems, and so *par excellence* philosophy or metaphysics. Nevertheless its stated aim was to win the surest and best happiness for man ; and since its final end was to know God, the supreme and ultimate being, the reasoning finally issues in a love of that supreme object, a love which is all-comprehensive, and inclusive of the entire intellectual and emotional nature of Spinoza. So the system is ethical and ultimately religious ; but it maintains itself as a philosophy, or metaphysical system, because the quest is intellectual throughout, and it is the intellect that seeks to compass all the higher goods for man. Spinoza's philosophy is a sublime example of a philosophy including every good within its purpose, and in the end evoking, not tumultuously, but steadily and profoundly, a feeling of religion, and so rousing to action many phases of the mind.

One may first notice the statement of his ethical aim in the early *De Emendatione Intellectus*, and the intellectual manner in which he leads his argument aloft through reason to God in his *Tractatus Theologico-politicus*.

The former opens in this wise : "After experience had taught me the vain futility of all that meets one commonly in social life, since I saw that all the things I feared contained nothing of good or bad in themselves, except in so far as the mind was moved by them—at length I resolved to consider whether there might be something that was truly good and

capable of imparting itself, from which alone, all else excluded, the mind might be affected : in fine, whether there might be something through which, if found and gained, I might enjoy constant and supreme felicity forever ".

Then with an assumed caution reminding one of the opening of Descartes's *Discours de la méthode*, which likely Spinoza had in mind, Spinoza debates whether it was prudent to abandon the obvious pleasures of the world for something he might never reach. But as he thought upon them, he perceived that these were dangers rather than pleasures, and threatened their votaries in divers ways, and assuredly distracted one from the search for a sure good. He thought of the troubles springing from the love of riches and sense enjoyments and desire for reputation, all so perishable, while " the love for a thing eternal and infinite feeds the mind solely with gladness, and is itself free from grief, and therefore greatly to be desired and to be sought with all one's might ". He decided to conduct his life so as to attain, as far as he might, this greatly to be desired end.

The fourth chapter of the later *Tractatus Theologico-Politicus* makes clear that this goal is of the intellect and lies in the intellectual love of God. " Since, then, the intellect is the better part of us, it is certain that we ought to endeavour above everything to perfect it as much as possible, if we really desire to seek what is profitable for us ; for in its perfection our chief good must lie. But since all our

knowledge and the certainty which really removes all doubt depend solely on the knowledge of God—in the first place because without God nothing can be nor can be conceived, and, secondly, because we can doubt of everything so long as we have no clear and distinct idea of God—it follows that our chief good and our perfection depend solely upon the knowledge of God. Again, since nothing can be or can be conceived without God, it is certain that all things which are in nature involve and express the conception of God in proportion to their essence and perfection ; and therefore the more we understand natural things do we attain to a greater and more perfect knowledge of God ; or . . . the more we know natural things perfectly do we know the essence of God, which is the cause of all things. Therefore the whole of our knowledge — that is to say, our highest good — not only depends on our knowledge of God, but wholly consists in it, a truth which is also evident when we consider that a man is more or less perfect according to the nature or perfection of the thing which he loves above everything else. He, therefore, is necessarily the most perfect, and is the chief sharer in the highest happiness, who loves above everything the intellectual knowledge of God, the most perfect being, and is chiefly delighted therewith. In this, therefore, our highest good and our happiness are summed up—the knowledge and love of God ".[1]

[1] Translation taken from the Preface to White and Stirling's Translation of Spinoza's *Ethic*, 4th ed., Oxford, 1910.

Spinoza lived and moved in a creative conviction that things must be as you think them along lines of flawless geometrical reasoning. No new idea this ; but Spinoza evoked from it a system, a comprehensive metaphysical Nicene creed which he held with fervent faith.

All sides of the man contributed. Maintaining always the supremacy of thought, Spinoza held the whole nature of man together, and sought its profit in his philosophy. But the supreme good lies in clear and adequate thought, and " the affects which are contrary to our nature, that is to say, which are evil, are evil so far as they hinder the mind from understanding ".[1] When not agitated by such, we retain the power of forming clear and adequate ideas, through which we transform our passions or affects to actions properly springing from our own nature. That Spinoza regards human nature broadly, appears from an explanation of " good " in the Preface to Part IV. of the *Ethic*.

" By *good*, therefore, I understand everything which we are certain is a means by which we may approach nearer and nearer to the model of human nature we set before us. By *evil*, on the contrary, I understand everything which we are certain hinders us from reaching that model. Again, I shall call men more or less perfect or imperfect in so far as they approach more or less nearly to this same model. For it is to be carefully observed, that when I say that an individual passes from a less to

[1] *Ethic*, Part V. 10.

a greater perfection and *vice versa*, I do not understand that from one essence or form he is changed into another . . . but rather we conceive that his power of action, in so far as it is understood by his own nature, is increased or diminished. Finally, by perfection generally, I understand, as I have said, reality ; that is to say, the essence of any object in so far as it exists and acts in a certain manner. . . ." [1]

Spinoza would bring all affections under the control of clear and adequate ideas of them, their causes and relations ; and so transform them into thoughts : " So far as the mind understands all things as necessary, so far has it greater power over the affects, or suffers less from them ".[2] This is Indian philosophy as well as Spinoza, and what one of us has not often recognized its truth ? It is clear that Spinoza's philosophy is a supremely intellectual system, and whatever he may have said at the opening of the *De Emendatione* as to the objects or purposes of his thinking, thinking was his joy and the greater part of his life, and needed no end beyond the pleasurable functioning of his nature which thinking represented.

Yet he was a man, and his thought was ardent, his convictions fervent and masterful. The *Ethic* is unsurpassed in the power of its reasoning, and seems to derive a further and mathematical consistency

[1] This and other extracts from the *Ethic* are given in White and Stirling's Translation. Comparing it with the Latin, I cannot improve on it. But Spinoza is easier to translate than to understand.

[2] V. 6. See V. 18, scholium.

from the geometrical form—definition, axiom, proposition, demonstration and scholium—in which it is cast. Yet, while the whole work leads on to a conception of God, and to a substantiation of the writer's thoughts of God, one need not expect to find an iron-bound consistency.

Our thoughts of God may depend upon the approach, through reasoning or through feeling. In a philosophy reasoning dominates, as feeling in a religion. The idea of God will, for the moment, depend on mood and the corresponding manner of approach. Sometimes Spinoza is utterly rationalistic—cold, intellectual, one might call him. But again he loves the object of his thought, and merges his thought in the object of his devotion. Both intellectually and religiously he thinks and loves.

He *thinks* his infinite Substance, its attributes likewise all infinite ; thinks it as thought and as extension, as the two combined, showing different phases. Then, drawn by intellectual love to the end and goal of all his reasoning, he is moved to more concrete hypostasizing, personifying. Love is formative : its nature is to hypostasize, to make concrete and personal.

Heaven forbid that I should attempt an exposition of Spinoza's philosophy or of his conception and proof of God ! But I may note one or two impressions which it makes on me. His proof seems mainly this : we think God—conceive Him in His absolute infinities and perfections ; think Him deductively, while we cannot imagine Him.

Spinoza follows fruitfully Descartes's distinction between the intellect and the imagination. The proof of God's existence becomes an affair of definition and of reasoning from our definition : it is a towering logical and metaphysical construction, built upon a definition or fundamental conception. Here is a sample : " For since His essence shuts out all imperfection and involves absolute perfection, for this very reason all cause of doubt concerning His existence is taken away, and the highest certainty concerning it is given ".[1] Which amounts to this : for since *my conception* of his essence shuts out all imperfection—and so forth. It was the old, old fallacy of reason, though it may be a truth of faith. Springing from the demands and formed by the processes of the mind, it carries no proof of anything beyond. In Spinoza it was a grand attempt to render logically valid, and so substantiate, a conception of his mind. Of course it did not proceed through arguments drawn directly from the observation of nature ; of which it took small account, although Spinoza felt the impact of the new astronomical discoveries and the physics of Galileo. To their tremendous enlargement of the physical universe he contributed his prodigious conception of God : of God the infinite Substance, infinite thought and infinite extension, by the side of which there was no other Substance. " Thou shalt have no other gods but me ! "

This man of rigorous intellect is not often called

[1] I. 11, end of scholium.

a mystic—wretchedly vague word ! Yet such proof of God's existence as we find with Spinoza or St. Anselm—sheer logic and *a priori* reasoning as it is —is analogous, if not akin, to the direct unreasoning, unlogical intuitions of mysticism.[1] Both metaphysician and mystic are impelled by the need or insistency of the mind, which, to be sure, in the two will work through different processes. With the metaphysician it is a process of strenuous climbing ; for the mystic there is a sudden spring upwards to an answering vision. In either case there is only an inner assurance of a corresponding reality. But in both cases the need and the attained conviction are silently anchored in the whole nature of man.

In any great philosophy there is always much that represents the common fund of thoughtful agreement among mankind, springing from the inductions of universal experience, or corresponding with the needs of the mind and the necessary processes of thought. Parts III. and IV. of the *Ethic*,

[1] Speaking of intuition, one recalls that Spinoza calls the third and final form of knowledge *scientia intuitiva*, and says, " This kind of knowing advances from an adequate idea of the formal essence of certain attributes of God to the adequate knowledge of the essence of things " (II. 40, scholium 2). I confess that I do not understand Spinoza here, though I see light when he beautifully says at the close of the scholium to Prop. 43 in the same part : " We must remember, besides, that our mind, in so far as it truly perceives things, is a part of the infinite intellect of God, and therefore it must be that the clear and distinct ideas of the mind are as true as those of God ".

which consider the "nature and origin of the Affects" and "human bondage or the strength of the Affects" show the abundance of general philosophic acceptance which had entered into Spinoza, and is still the common property of those who are read in philosophy and the better literature of the world. This fund of philosophic acceptance in the *Ethic* may reach back to Greek philosophy and to the great literature of Greek and Roman humanism, that storehouse of human nature. There is Stoicism in it and much besides. Spinoza's fashioning of this general wisdom, along with his own thoughts, into a rigorously concatenated system resulted in many conceptions close to our philosophy and psychology to-day.

An example is his intricate conception of mind and body not as different things, but possibly as manifestations of each other, or rather as distinguishable phases of what is indistinguishable as an entity. "The mind and the body are one and the same thing, conceived at one time under the attribute of thought and at another under that of extension. For this reason, the order or concatenation of things is one, whether nature be conceived under this or that attribute, and consequently the order of the actions and passions of our body is coincident in nature with the order and passions of the mind".[1] After this one need not be surprised by the very modern remark: "We neither strive for, wish, seek, nor desire anything because we think it to be

[1] Part III. 2, scholium.

good, but, on the contrary, we adjudge a thing to be good because we strive for, wish, seek, or desire it." [1]

Spinoza carries back to God the cause of everything in man and nature. He carries it back rigorously in his fundamental reasoning. Conclusions directly applicable to human conduct bring more open fervour, and one may say that he then carries back to God this universal causation lovingly and religiously. He is not unlike the Stoics here, and his social ethics seems completely Stoical. For example, the thirty-seventh proposition of Part IV. is this :

" The good which everyone who follows after virtue seeks for himself he will desire for other men ; and his desire on their behalf will be greater in proportion as he has a greater knowledge of God."

The demonstration opens : " Men are most profitable to man in so far as they live according to the guidance of reason, and therefore, according to the guidance of reason, we necessarily endeavour to cause men to live according to the guidance of reason ". And so the proof proceeds. In the scholium—Spinoza's scholia are always lighter reading, and written with some regard for the weakness of his readers—he says : " Everything which we desire and do, of which we are the cause in so far as . . . we know God, I refer to *Religion.* The desire of doing well which is born in us, because we live according to the guidance of reason, I call *Piety.*

[1] Part III. 9, scholium.

"The difference also between true virtue and impotence may be easily seen to be this, that true virtue consists in living according to the guidance of reason alone, and that impotence consists in this alone, that a man allows himself to be led by things which are outside himself, and by them to be determined to such actions as the common constitution of external things demands, and not to such as his own nature considered in itself alone demands."

This is good Stoicism. We rise above it as we reach the final conclusions of Spinoza. Intellect is best, and its actual being in the adequate idea, which is the highest form of knowledge. The life, the essence, of the intellect is to think, to conceive intellectually—not to imagine, *i.e.* make images. Its loftiest office is to conceive and know God ; its blessedness is the intellectual love of Him, which follows upon the adequate idea of His eternal infinity. This is to know, and may we not say *feel*, the intellectual love with which God loves Himself eternally and also man. And that part of the human mind which is fixed upon this intellectual love of God loves under the form of eternity, and is eternal.

It is known by all who have studied Spinoza that, as his thought rises to these heights of the intellect and intellectual love, it becomes obscure. Even Spinoza could not make these intangible vistas as clear as ordinary geometrical demonstrations. In such matters we never know quite what we mean, and how can we be sure of what Spinoza meant ? The *Ethic* closes with a famous passage : "I have

finished everything I wished to explain concerning the power of the mind over the affects and concerning its liberty. From what has been said we see what is the strength of the wise man, and how much he surpasses the ignorant who is driven forward by lust alone. For the ignorant man is not only agitated by external causes in many ways, and never enjoys true peace of soul, but lives also ignorant, as it were, both of God and of things, and as soon as he ceases to suffer [1] ceases also to be. On the other hand, the wise man, in so far as he is considered as such, is scarcely ever moved in his mind, but, being conscious by a certain eternal necessity of himself, of God, and of things, never ceases to be, and always enjoys true peace of soul. If the way which, as I have shown, leads hither seem very difficult, it can nevertheless be found. It must indeed be difficult since it is so seldom discovered ; for if salvation lay ready to hand and could be discovered without great labour, how could it be possible that it should be neglected almost by everybody ? But all things noble are as difficult as they are rare ". [2]

Great words, great thoughts, ennobled in a profound and earnest nature, and yet part of the wisdom of the ages. Spinoza, like all highly originative minds, takes the thoughts of the old philosophies and of the great religions, and makes them anew in a new

[1] The word " suffer " need not be taken here in the common sense of feeling pain ; it means the state of being acted on and coerced from without ourselves.

[2] Compare the closing paragraphs of Part II.

structure. Plato and Aristotle, and their predecessors, loved knowledge for its own sake, and recognized the action of the mind, in knowing and understanding, as man's highest function and the realization of his most distinctive nature. Spinoza, in his own fashion, proves this thought anew.

And God—Spinoza's God—and human freedom. I do not believe that any man's conception of God, to which the experience of his life has contributed, can be fully projected or reflected in the mind of another. There are so many shadings beyond even the most strenuous attempt at definite statement. It has been said that Spinoza's God is not the god of theology. I do not know what is the god of theology ; but to me Spinoza's thought seems to pass through an enormous compass—always the same ? I doubt it. Spinoza's God is infinite mind, infinite extension, with other infinite attributes accepted but unknown. His eternal perfection of being embraces the whole of Nature in its total variety and its inevitable sequence of all-pervading law. The substance of God seems the infinite extended universe of being, law, and sequence, and has no purpose beyond itself. How could it have such a purpose ? How could there be such a purpose outside of or beyond this infinite mind and infinite extension ?

Can you love such a God ? Yes, intellectually, and why not with feeling too? What can be grander than this universal unfailing self of God, this all-embracing web of law, directing, nay constituting, all mind and all body. Think of it ; think it out ;

and dwell in this quite unimaginable but thinkable conception. Admire it, adore it ; above all have an adequate and convincing idea of it. And you shall then know the intellectual love.

And may you not—may not Spinoza—go further? Is it forbidden to symbolize this infinite web of mind and motion into a concrete thought of One, of God ? Perhaps that is the way God has been often made, the felt need of a Creator ever driving on the constructive and unifying human mind. Symbolizing need not be self-conscious. I do not know how it was with Spinoza—God-drunken as he has been called. But he kept building up his thought of God, and then kept thinking and living out his life in loving accord with his conception. And as you live in accord with such a conception, you come to live in obedience to it—till the complex of law, being, and power becomes a concrete symbol ; and It becomes Him. " Thy will be done."

Of course this God could have no purpose beyond Himself, nor love for anything beyond Himself. That were unthinkable, quite incompatible with the Spinoza conception of the divine nature. God's love of men was part of His love of Himself ; their lives, physically and spiritually a phase of His controlling law. Mind and understanding were given them, as part of the divine intelligence. Their love of Him was part of the divine love of Himself and of men as well.

Seneca had said, ages before, "We are born in a Kingdom ; freedom is to obey God ". To know

God is Spinoza's freedom ; to perfect one's thought of Him, and so our intellectual love of Him. Beyond this there is no freedom, but merely the endurance of a state of being acted on by things of lust ; only passion and the suffering of unthought-out affects—affects of which one has no adequate idea. Such was to Spinoza as profitless a phantasmagoria as to any Brahmin.

Philosophy is a noble mode of life. It exemplifies incidentally the need of the human mind to think and understand, to pursue its reasoning processes and even ascribe to them an accordance with reality. Spinoza was absorbed in these processes of the thinking mind ; they represented for him ultimate validity, reality, and God ; also, as of course, all life's values. His thought apparently did not base itself on feeling, or consciously seek support from any emotional corroboration. It had its own fervour, and one may think that its furthest conclusions somehow harked back to the human need of a God—some sort of God—to love and be sustained by, intellectually if one will. Thus it did have the support, as it were, of the verity consisting in universal human need. To this extent it was a function of more of Spinoza, of more of man, than the intellect, and stood in a larger validity than that of ratiocination. Like other great philosophies it was more than an affair of the intellect alone. Somewhat ineffably it seems sustained by the social instinct and the pointing of religious feeling.

CHAPTER VI

RELIGION

I

Personal

Mankind is repetitious. I am quite aware that whatever religious feeling I may experience is not unique, however personal and intimate, and, if you will, spontaneous and original in me. None the less is it mine ; none the less is it something between me and my God. Neither is my religious thinking singular, though it comes partly from my own feelings. It repeats the thoughts that others have had ; it even recapitulates the archaisms of the past. Yet my thought may have sprung up within me ; it may be my very own.

With supreme religious spirits, like the Founders of religions named after them, or like Paul or Augustine, thought and feeling may be unique. Their feeling attains heights and sinks to depths not reached by other men ; their thoughts drive on beyond the range of others' thinking. From them come the suggestions of our own religious feeling

and the tenor of our thought. Yet our feeling and our thought may still be our own experiences ; and the Founders would have wished it so.

I pass in review my middle age, I scan the memory of my early years, I turn the leaves of my college diaries, and find that I have always been religious-minded, and through many a turn and winding. Before entering Harvard, my mind and boyish temper had rejected the Christian Faith. While in college I could not accept it. Yet my mind, my feeling too, pushed on to the idea of God and formed a need of God in me, and a trust in the divine nature and purpose. In childhood, in boyhood intermittently, through youth and all the following years, I kept the habitude of prayer. It is still with me a way of communion, a turning to the great Companion.

Not that I have a positive conception of Him. I am not even sure that He is there. Would I were as certain of Him as of my need to pray ! I do not know what He is, and should someone ask, What do you mean by God? I could not satisfy the questioner. But my conception of the world and all living things demand Him. He is called for in my scheme of life.

The call is twofold—from the world at large, its hidden order and the seeming obvious design of things, its infinite series of organisms, those of one cell (and that as yet unfathomed) on to apes and men, beings unspeakably complex, yet each fulfilling its functions, realizing itself as an organism, as a

living and apparently purposing individual. In my ears this scheme of beings calls for God.

So the world without ; and, even more utterly, from myself, from my sense of insurmountable creaturehood. However I was brought about, *I* did not do it. I am not self-made. I both think and feel that I had a Maker—beyond my earthly parents. My life has been precious, wonderful, a thing to be grateful for to some Donor. I cannot think myself as put together chemically or mechanically by " natural law ". I must have a Cause that is all that I am. The being of that Cause must include all that it has made me. Logically my existence requires it, and I, living, thinking, feeling, reach out to it as God. Whatever pride I have ever felt, or exultation, has been tempered, and again enhanced, by my sense of creaturehood and my gratitude. And, beyond this, I need faith and confidence in a divine purpose in order to keep my life whole and hold it true to its best fulfilment.

I feel grateful to all the people that I love or have loved, who have been—enduringly in the effect—kind and good to me, and loving. But above all I feel grateful to the Power that set the scene and placed me there. As I am grateful, as I love, so must that Power have loved me—" We love Him because He first loved us." My sense of creaturehood turns to gratitude and love. As I feel grateful to Him altogether, so I love him in my entirety, throughout and because of my total being. I cannot thus love any fellow-creature or mankind. I like

men and women that are congenial ; I love those I love. I might care for the rest because it seems they are sons of the same Father. But even sonship has degrees ; the worm has less to love God for than I have. And many of my so-called fellows seem to have much less than I to love Him for, and in fact to love Him less.

Spinoza says we should not expect God to love us in return for our love of Him. But for all practical and thinkable purposes, He loved us first, or His own thought for us ; and so made us what we are. This is good Platonism and good Christianity. I do not impute to the Divine Love either the violence of human passion or the feebleness of human sentiment. But its efficient benevolence is borne witness to by the evolution of this world of creaturekind. We, who are creatures, can lose the help, the comfort, the support, the love of any fellow being, and yet quite possibly go on. But not the support of God. As I wrote years ago, so I say now—God's love taken, life is cut off at the source.

In all this, " the question of good and evil ", of predestination and so forth, bothers me not at all. Life has been good to me, if I die or lose my faculties to-night. But for some years thoughtfully, philosophically, above all scientifically, the categories of " good and evil " have had slight interest for me. To my mind they do not bear analysis. Ethics is a stupid science. Let us be biologists in a whole sense. Life in its progress walks over good and evil without seeing them. *Vae Victis*, if you will ! Yet

subtle, and passing human insight, are the ways of defeat and victory. " If the red slayer think he slays," who knows which is the slain ? The brutalities of life are often vain. All one need know of good and evil is that no evil can come to a wise man, and " that to them who love God all things work together for good ". Or, if frustrated apparently or cut off, one can at least say with Marcus Aurelius, " Three acts are the drama ", and not the five we would fain have had.

Such then has been my general religiousness. In my early middle life I became a believing Christian. It came about from a juncture of three influences. While studying the Greek and Roman development, I began to feel a conviction that all had not been reached—that the course led on to something more to come in the fullness of time. I was thus as prepared for Christianity as was the heathen world in which Jesus was born. Immediately after this, the study of the Old Testament impressed me with the pointing and the religious growth shown in its canonical books, almost from the Pentateuch to the latest Psalms and prophetic writings. There was a more vibrant expectancy in them than with Greeks and Romans. Through these ancient antecedents I was prepared.

Next I came to the Gospel. The life and teaching presented there seemed a true fulfilment of what had gone before, or rather a completion of what was lacking. It drew me with its moving power. The third influence was a human love for a devoutly spiritual

woman, through which I was melted to the love of Christ and the acceptance of His life and resurrection. For years the Christian Faith was a living energy within my nature. I have never ceased to care for it. But I have passed on, and can no longer truthfully repeat even the Apostles' Creed.

There is less passion in one's religion when one is old; which may be just as well, since passion brings rancour, and still blinds our religious wranglers. The knowledge we all need is knowledge of ourselves and of each other, to bring mutual understanding and tolerance. My own mind is tolerant, but my aversions prejudice me strongly. I detest the zeal of our ignorant Fundamentalists. They fight for the position they have taken. This may mean they fight for their self-esteem. Is their religious faith really strong? The truculence of the less ignorant among them may come from fear for their faith's reality. I may have been in some such mood when the acceptance of the Christian faith was new within me, self-conscious, and anxious lest it be shaken. As its emotion partially spent itself, its intellectual convictions wavered. Its fervent expression is in the chapters of *Ancient Ideals* on Christianity. Its mellowed stage gave me the understanding sympathy of *The Mediaeval Mind.*

I think and feel now on the level of my more constant religious spirit, which is undogmatic, but strong in general feeling and general intellectual persuasion. An habitual turning to God has become

part of my character. It forms an atmosphere, yet, like the air, is not tangible, but divides and closes in again when an obstacle has passed through. So my religious mind and temper give me no positive certitude. I am but a partial mystic, while, to me, the intellectual considerations surrounding religion are complex and vast. Nevertheless the sense of God has been a comfort and a strength to me. It does not hamper my action, but upholds it in hope whenever my act or conduct meets with my own approval. Within the range of my activities of body or mind, I feel as free as if I stood self-made and godless. Nor have I ever thought to lay on God the responsibility of acts within my will and power so far as I can see. As His creature I still feel my own responsibility and freedom.

II

More General

I would now speak more generally and less personally of what seem to me the validities and values of religion. Religion has been so many things; it has manifested many kinds of emotion, different movements of the mind, different responses of the body, through all degrees and stages from the impulses of savage fear and its crudely reasoned quelling, to the spiritual and intellectual love of God, which may issue from the whole knowledge and experience making the individual's life. So with the savage we must think that his experience of the

means and accidents of life, his reactions to the attack of fang or stone or spear, inspired his deprecations and fashioned the rites which gave them power. Does any common element or family likeness run through religious phenomena? Is religion a single something to apprehend concretely and define? So appallingly diverse are the manifestations that one doubts whether to call them *its* manifestations.

One may imagine religion as springing variously from the events of human life, its births, diseases, deaths, its frequent helplessness, its pervading precariousness, its whole jumble of experience. Assuredly the origin of religion does not lie in any single human feeling, impulse or thought, not in fear, not in dream-sprung ghosts, not in hope of immortality or sense of gratitude.[1]

But how should one state the origin of anything —of an event in Nature, of a living organism, of a human conception or institution? The origins or beginnings of mankind, of the white races or the black, of government, law, religion, were they discoverable, might be found innumerable, dispersed, indescribably ramified. The cause of a germ-cell is as much a mystery as the ultimate grounds of human conduct. And who can enumerate the contributory streams and rivulets of a river, not to mention its hidden springs and the capillary oozings of its banks? Religion may draw increment from

[1] I very much agree with what my friend E. Washburn Hopkins says on pages 106 and 107 of his admirable *Origin and Evolution of Religion* (Yale Press, 1923).

any element of the barbarism or civilization enveloping a given religious phase.

Religious manifestations and the faculties presumably behind them seem well nigh as broad as life ; hereafter I may say the same of imaginative art and literature, that they and the faculties producing them are likewise as broad and as many things as life. Still, as we may find in art, perhaps we may also find in religion, some *modus operandi*, some common mode of the religious process in man and corresponding manner of reaching expression, which may lend itself to characterization. Although religious experience and the forms of its expression may be too multifarious to be brought under one definition or description, possibly the mode of experiencing and the way of expressing experiences may be characterized.

I hazard the statement that the moving religious impulse is one of feeling rather than thought, although intuition or perception may have given rise to it, and almost immediately thinking comes into concomitant and directive action. Proceeding a little further, beyond the initial impulse, the mode of experiencing seems to me likewise one of feeling ; and, I believe, feeling, rather than thought, supplies the moving power which carries the experience on to utterance or expression. That is to say, the driving force which impels the experience to express itself is feeling, or feeling stirring to emotion. A religious act may have some end in view, and so appear to be moved by logical considerations. Yet

some feeling, some impulse or intuition which does not reason, lies behind, or once lay behind, the act and the belief in its effectiveness. The act itself is an effect.

Thought at once co-operates in the construction of the form in which the experience finds expression, and continues to play a guiding and shaping and constructive rôle. Thus feeling is informed, fashioned, and in part suggested by thought considering and assembling the emotional experience, and then rationalizing it through bringing it into relation and co-ordination with other experiences or elements of human life. This adjustment of the particular religious experience with other data of the mind is the function of the intellect in connection with religion.

Possibly the nature of the feeling itself may be put more definitely. Religious feeling is not utterly vague and pointless ; it has direction. The direction is outward rather than inward. A feeling which may be called religious is not directed toward the individual or self experiencing it, but outward toward something else. In general the object toward which it is directed is conceived as possessing some of the qualities belonging to the experiencing self, or which are at least analogous to some that are his or fall in a like category. The feeling called religious, with its concomitant of thought, tends to humanize or personify a tree or stone, and to perceive or imagine beings in some way like man and requiring his attention.

It may happen in the course of time that a reverse process will take place. Religious feeling and thought may become broadly informed and philosophical. It may then appear that the object of religious feeling, which is God, must be more unlike man than had been imagined. So there comes a tendency, which reaches its climax in such a man as Spinoza, to dehumanize and depersonify the divine nature. Thought is the agent here and not feeling. Feeling may accompany or be drawn along in the process ; or it may be left behind.

Thus it appears that while the initial religious impulse is one of feeling, the subsequent experience and expression combine feeling and thought ; and thought may be taken to include intuition as well as discursive thinking or reasoning. The religious processes seem to set themselves very broadly in the psychic nature of mankind. In their advance through history they will be found making general use of the means and methods that go to build up current human acceptances and convictions.

A few words more as to the functioning of human qualities or faculties in the making of religion. Among the members of any civilised society there are manifold differences in mentality and feeling, and a corresponding difference in religious beliefs. Our own qualities function in our religion, as in all else that we feel or think or do. If you are narrow, harsh, conceited, untaught and unteachable, your beliefs will correspond. You may be an intolerant imbecile blatantly maintaining that what you hold

is true, and all who think otherwise are damned. You are yourself in your religion. Religious conviction does not turn a sow's ear into a silk purse.

At least not all at once. It may be that in your ignorance you are able to learn and capable of growth. You may gradually develop and your faculties may become capable of better things. Enlarged beliefs or impulses may seem to come as a quick inspiration, but they will still be you and could not have broken on you with apparent suddenness had you not first become capable of them. They are the blossoming of what you have gradually come to be.

Let us assume that we are or have become such that fine thoughts and feelings are natural to us, and enter our religious experience and expression, even as they function and press to utterance in our social life or appreciation of poetry and painting. To one of the finer sort the functioning of his faculties in religious impulse and belief may be of the utmost worth and comfort. How shall his nature function more humanely than in thoughts and feelings of reverence, of gratitude and love, directed toward that Divine Being which he holds perfect in knowledge, power and love? What other trust and contemplation can so draw out a man's nature? What can form a better ground of character and spring of action? In the conception of God and of human relationships to Him the human mind and heart may function without stint, and the human self attain its furthest realization.

But here I must put to myself a quite different question, though scarcely hoping to answer it. Beyond the religious impulse itself, that is, beyond the subjective feeling it springs from and the conviction it gives rise to, is there any evidence for its validity, any evidence that it corresponds to some answering reality, which confirms the religious impulse in objective truth? The intellect in operating to shape the religious experience can hardly impart objective validity to that which springs from subjective feeling. The intellect cannot warrant that the subjective impulse or experience, which the intellect is fashioning and bringing to articulate expression, either relates to any reality, or has any justification beyond itself, or at all events beyond the mind. To afford any such warrant the intellect must abandon its exclusive occupation with the content of the religious experience, and passing out from it find whether such experience can be brought into harmony with another order of fact, which is apprehended and certified by quite a different procedure of the mind endeavouring after reality and truth. Here the mind seeks other data than those of feeling and spiritual adjustment, and uses other methods of investigation and criticism.

What assurance of its own validity may be carried by the religious experience in itself? Obviously one points first to its universality. Modes of religion, corresponding to the various stages of general barbarism or more advanced culture and mental development, are found among all the tribes and

peoples of mankind. Some sort of religious fear, with some notion of how to affect the conduct of dangerous beings, existed with the prehistoric representatives of *homo sapiens*, and perhaps with the cruder bipeds that preceded. No tribe of savages to-day is without some rudiment of the same. With the better equipped peoples religion has thriven progressively, inclining to ever nobler forms.

This universality seems conclusive proof that a sense of mystery and the impulse to turn in fear or hope to some kind of power outside oneself became part of the human psyche at an early period. The sense of mystery, or a sense of the precariousness of the event, may come from a dumb but gradually more conscious ignorance. Not knowing how things act, the savage projects his own ways into them—animistically as it is called. After some millennia of doubt and mental divagation, we have come to a certainty that stocks and stones do not act like men, and cannot be influenced by what might turn men's minds. Nor are trees and animals any longer mysteries in the way that they have been. The old notions are relegated to the realms of fancy.

Nevertheless, through growing knowledge of the physical world, our ignorance has become profounder and more broadly based. We may still be disposed to recognize an underlying general validity in the resulting sense of mystery and the impulse to deprecate the action of what is beyond our understanding, and so propitiate the unknown. But we are no longer afraid of ghosts.

Another ground for reliance on the validity of the religious experience, next to its universality, lies in its strength of conviction. The savage's fear is as strong as the saint's assurance or mystic conviction of union with the object of his adoration. To-day the savage fear is recognized as groundless, and many think that the worshipper's assurance of his God has value or validity only as a comfort and inspiration to himself.

But here I pause, and, if I do not reconsider, at least re-open my mind to the possibility of re-consideration. Am I willing to stake my faith or conviction altogether upon the processes of the discursive reason. Shall I not recognize the value and the human validity—possibly pointing toward objective truth—of intuition and feeling? May I not find some justification of the religious conviction even before the bar of the assembled human faculties, including reason? A justification, that is to say, of the religious conviction or attitude in general, on principle as it were; for in the experienced and possibly advanced age in which I live, I cannot recognize the specific validity of notions which could only sustain themselves in a more childlike *milieu*.

Although religious experiences may be of personal value without regard to their objective truth or correspondence with any outer reality, nevertheless we may think quite rightly that their ultimate value, even for the possessor, must depend upon their truth. Hence we have to consider their validity from this objective standpoint. Some test may be had by

observing how religious experiences, crude or advanced, tally with the order of the world as we perceive and reason on it. The immediately human phase of the same question is how do religious experiences and convictions square with the rest of the data and experiences of human society.

Clearly the religious ideas of a simpler time are out of accord with our conception of the order of nature and of the issues of human life so far as these are held in it. The notions underlying the practices of early magic, or touching the baleful or beneficent conduct of stones or trees or animals, have little part in our present thoughts of nature or of ourselves in relation to it. Yet they once represented the ways of things and what happened to men. The magic rite had been found to bring successful hunting, and the charm to turn aside the hostile spear. That was the way things worked and might be worked upon or affected.

For a malicious but not irrelevant digression, we may turn from ancient or contemporary savages to the civilization of France in the second half of the sixteenth century. There an intelligent publicist and jurist, named Bodin, is holding court and convicting men and women of the crime of witchcraft—on abundant evidence. Many witnesses appear and testify that the accused practised witchcraft and caused the death of So-and-so. And the court pronounces sentence upon the weight of evidence. There was as yet no prevailing recognition of such an order of nature as would shut out convictions for

witchcraft on any amount of testimony. In after years witchcraft was not overthrown by direct argument, but passed from the region of the conceivable upon the general acceptance of opinions as to man and nature which made it absurd.

From such a digression, let us turn back, or forward, to Homer. Homeric conceptions of Fate and of the action of the gods and of the lots of men all worked together for a general view and judgement of human life, bitter as might be, considering the eagerness of desire and strength of will moving the heroes of the Epics. We still find wisdom in the Homeric view, which squares with such lives as Achilles and Odysseus led and some men lead to-day. But the religious super- or sub-structure, with Ares, Hera, Apollo, and Athene, and Zeus stronger than the rest, has lost serious appeal. Now it belongs to romance and to symbolism. It has no scientific value, yet still draws us through associations which are as memories of our own past, real and alive and moving.

The Greek gods were symbols of Greek judgements upon life's happenings and the consequences of human conduct. Although the validity of the symbols has passed, Greek thoughts upon human lots and human conduct have become part of the world's store of ethical wisdom. Greek mythology, however, was not pushed aside by a more scientific understanding of the order of nature. It was superseded by a new religion, itself built upon an antecedent, and destined to be affected by Greek thought.

The new religion was the Gospel; the antecedent, Judaism. Israel's tribes were addicted to the idolatries of the surrounding heathen, which represented the ways of the superhuman for the common Jew as well as for the Syrian. But the cradle of the Gospel was the progressive monotheism of the Hebrew prophets, which had raised the masterful personality of Jehovah to sole rulership over the nations and over natural agencies like fire, drought, and storm. He had become the Creator of all. Not only in the beginning but throughout all later times known to the prophets, the earth and its peoples were his miracle. The prophets recognized a moral and religious order, but not a natural order in the world.

Imbued with compassion for the Gentiles, holding out eternal life to mankind as a promise and a threat, Jehovah passed into the Christian God, and thus into a threefold unity. There was the Father, there was Christ, and there was the Holy Spirit, and eventually the Virgin as a popularly added member of the Trinity.

So monotheism reached a theological and philosophical, as well as popular, division or distribution of function in the Godhead. The Christian Trinity had a historical origin, arising at a certain time through a certain juncture of ideas. So had the various Trinities of India, and in the third century of the Christian era the Trinity of Plotinus. But the trinitarian distribution and appropriation of function within the Godhead was also a natural ease-

ment of thought endeavouring to conceive the divine functions without impairing the divine nature and unity of being. It was an easement for feeling too, in that it brought God or a phase of God within the reach of human love and worship, even as Jesus had done by feeling God and thinking Him as the Father.

Such thoughts were to be laboured with by generations of doctors, were to be tried in the categories of philosophy, and, it may be, were to be depersonified as they came to reflect men's thoughts upon the Universe and natural law.

All this need not be set forth, since I am concerned with religion and very little with theology. A full historical characterization of this enormous matter is not called for. Only this much need be said : totemism and magic have passed away ; polytheistic mythologies are no longer taken seriously. There remains monotheistic religion with its faith in an eternally creative and efficient God, who directs the world but is not part of it. Beyond the conviction of religious faith, is such a God attested and confirmed by the evidence of the order and events of the physical world and the course of human history ?

Regard this question from another angle. Our cumulative store of ethical wisdom agrees in general with the experience of mankind, of which it is the reflex and the fruit. Naturally it contains inconsistencies and contradictions, due to the varying experience, moods, and conclusions of men living

at different epochs under various conditions. It is always undergoing some modification, which, however, may consist chiefly in rephrasing. It has always been connected with religion, and might receive further precepts as divine commands from a new religious Gospel. But time has shown that this gradually accumulating store of practical or ethical wisdom is not inseverably bound up with any definite scheme of many gods or one. It survives religious change, and on the whole stands the tests of time.

A religion is more self-consistent, more structurally interdependent or organic. It is therefore more apt to live or pass away as a whole, although it has drawn much from its setting and antecedents and in turn leaves straggling survivals in its passing. It is less elastic and adaptable, and less amorphous, than the cumulative fund of ethical wisdom which it may modify or add to. Being more imaginative, it is not so close a reflex of human experience, yet is framed to meet it, supplement or explain it, and palliate it. Perhaps religion is removed one stage further than working ethics from the occurrences of life. Can any religion be confirmed or substantiated, like our cumulative store of ethics, by the testimony of events in nature or the courses of human affairs ?

Increasing knowledge of the ways, finally of the laws and order, of natural phenomena, which has discredited the lower phases of religious belief, has not yet overthrown monotheism and the milder

modes of pantheism which may be held religious. On the contrary, they are still accepted by many thoughtful people. As touching the divine or teleological fashioning of the world of man and nature, the evidence from science and from human history is inconclusive, making both for and against God's providence. Much of the vast fund of data seems but vaguely to bear upon the question, or even to be quite irrelevant, according as one chooses to regard or interpret such large matters. The argument is of enormous vagueness and uncertainty, and for many people their total knowledge and the total experience of their individual lives seem but to add to this uncertainty, rather than to make positively for one conclusion or another.

What does one mean by God? or by Creation? What does one mean by Nature or by natural law? What is the meaning of one's monotheistic faith, or of one's acceptance of pantheism in some elusive form? Or will one cease to support any given form of religious belief and find refuge in the validity of the religious principle, the general underlying fact that mankind has always focussed its general sense of life, its sense of strength and weakness and dependence, in some religious attitude toward the unknown?

Obviously we cannot undertake a long sifting of the multifarious data that may bear upon this problem. It is even difficult to seize the strategic angles of the argument, and find that one side stands or falls, or that its position is seriously

threatened by this or that pregnant consideration. For example, the ever-widening recognition of the operation of sheer mechanical laws not only throughout the inorganic world, but in the growth and functioning of living organisms, makes an impressive argument against the all-embracing efficacy of any God. Yet thereupon it is shown that mechanics and chemistry still leave the principle of life, as well as the activities of thought, untouched and unexplained. At present there is no system of mechanical or physical law that obtains implicit recognition. The adaptations of the inorganic world to the eventual sustenance of living organisms are arresting ; and the evolution of myriad organisms, plants and animals, from lower or simpler to higher or more complex and perfected forms with a corresponding increment both of physical function and psychic faculty or intelligence, makes mechanical explanations rather lame, and suggests the action of divine efficient Mind. These are lofty questions. We are still far from their solution, and a final adjustment of their bearing on religion seems remote.

In the meanwhile, when I look directly at the nature of religion or religious faith, I seem to see that it is not so much a counter principle to reason, or to rational knowledge, as a possible parallel, another mode of apprehending fact. Yet for my part I believe that it issues from feeling ; and that while the intellect assists in religious expression and affords guidance too, it did not furnish the initial

impulse, nor is it the moving power. Reason is the guide, philosopher, and friend, but scarcely part of the kernel or essence of religion. Therefore it would seem not to be within the power or province of discursive reason to furnish through its processes an ultimate and irrefragable confirmation of religion, or on the other hand a *reductio ad absurdum*. Why look to reason for such a final confirmation or refutation of that which represents a different psychic process, a generically different impulse toward the true and real, and a different mode of apprehending it?

Yet I am far from certain that history sanctions so deep a separation between religion and the ultimate critical or judicial office of reason. Both feeling and reason find their home in the same individual; we have not so surely traced them to their secret lairs in human nature as to be certain that they are not ultimately one—one in root and origin in the unifying self. We should wish to think that our religion is of the whole man; that the rational phases of our nature are somehow interwoven in it. Here *Gefühl* is much; but we cannot say, as Faust beguiling Marguerite, *Gefühl ist alles*.

It is the progress of rational knowledge that has discredited, one after the other, religion's cruder modes. Specifically they were proved untrue. But they may have represented some truthful principle in human nature and its adjustment with the world and God. Even in rational knowledge the principle of truth lies in the desire to know, the striding on of

thought, rather than in any particular fact ascertained, which further knowledge may *un*ascertain.

In the matter of religion we cannot comfortably throw reason out of court, or deny its place even in the court of last appeal. Only we cannot permit it, on its side, to elbow out its peer, intuitive feeling, which possibly in the course of history has not shown itself more often or more deeply in error than the intellect. Reason cannot be permitted to discredit the validity of feeling as a realization of itself and a mode of apprehending outer reality. With feeling as with reasoning, it is not the definite phase or apprehension or ascertainment which stands firm against reversal, but the principle of the underlying value and validity of a human function, be it feeling or be it thought. In both cases, persistency of action, rather than specific conclusions or beliefs, seems to represent the surest truth for man.

Moreover, the criticism of feeling and intuition may be applied to the results of reasoning, and withal as fittingly as we apply the tests of reason to the specific apprehensions of feeling or specific intuitions. A long course of logical reasoning may reach a result which one feels to be monstrous ; common sense calls for its rejection, the rational faculty, the intellect, will itself concur in the exposure of its child. Conversely one of the most beneficent functions of reason is to curb the absurdities and expose the impossibilities involved in the specific apprehensions of feeling, or in the creations of fancy, which is reason working under the dominance of

feeling. Reason may conclusively expose the absurdities of such and such belief, and feeling will quiet down and readjust itself, evincing reasonableness in its turn, and proving the interadaptability of human nature, the readiness of one phase or faculty to adjust itself with others.

I have approached religion from the side of human faculty, without specific reference to the shaping power of the Divine throughout it all. I have little to add to the various arguments in favour of the existence of a Divine Reality corresponding to, shall we say, the underlying or general current of religious belief in men. Yet, like most men in all places and times, I believe there is such a correspondent Reality, nay, not correspondent, but rather pre-operative and creative, even creative of this motley multitude of diverse beliefs that are found among mankind.

From stage to stage I think there can be traced the ennoblement of religious faith, from fetishism to the conviction of one universal God. And as the conception has advanced and lifted itself structurally and logically, so it has gradually purified itself morally, and has risen to the perfection of righteousness in the Divine nature.

God is needed in the world. As I have said elsewhere, " The hypothesis of God is better than any no-hypothesis of no-God ". Falteringly and brokenly as we may understand, and fail in our foundations for this hypothesis, still the world without a God is far more utterly shiftless and inexplicable.

But I would not stop with the above colourless non-committal statement. For feeling and intuition have their validities, as well as the intellect. They may be the foundation of intellectual apprehension and construction. The superstructure of a philosophy or other rational fabric may be built upon a basis of intuitive conviction. Was this not so in the philosophy of Descartes, with its initial certitude of *cogito ergo sum*? And Augustine, long before, in his "I who doubt *am*," found a certitude that might support a rational faith. As touching human freedom, can arguments concerned either with divine foreknowledge or mechanical determinism, avail against our consciousness? Why shall we not accord a like validity to the impulse or conviction dumbly underlying religion's changing forms? a conviction common to mankind and most potent in the consciousness of a Socrates, a Plato, an Isaiah or a Christ Jesus, a Plotinus or an Augustine.

These are strong considerations. For me, I believe in God. A consciousness of a relation to the divine, outdoing and out-valuing all other relationships, and including them, enfolds me—I wish I could say *always*. I cannot say that, for I am not a saint. My life has many godless hours, with thoughts and occupations apparently unrelated to Him, even as they are unrelated to the major unifying current of my life. But my unity lies in my relationship to God, a relationship of gratitude, love, and aspiration. He made us; so He first loved us, and is our inspiration.

What do I mean by God? I cannot fully say. Surely I cannot define Him. I am neither Augustine nor Aquinas—and did they succeed in passing over to others the conception filling their minds? They did much; but their office is not for lesser men, less unified and consistent men, less powerfully arguing men. And the convictions of these great ones may not live in us. Times change. We must be taught of our own lives, and realize God for ourselves.

CHAPTER VII

ART AND MORE ESPECIALLY POETRY

As a boy I cared for poetry, rather than for painting or sculpture. There were few great works of art to be seen in America fifty or sixty years ago. But the works of the poets had been always with us. Liking poetry before entering college, I read it constantly in my four years at Harvard. I read the whole of Shakespeare and the whole of Milton. I knew much of Palgrave's *Golden Treasury* by heart. Browning became a part of me—Robert, not Elizabeth, though I read her too, and many others. It was my good fortune not to try to be a poet myself, having neither the creative imagination nor the gift of verse.

Even after college I read more poetry than prose fiction. But the prose came too, and I have long since become a novel-reader. In Germany I even read German novels, and much of Goethe and Schiller, and was an enthusiast for the *Niebelungen Lied*. I made the Greek and Latin poets mine when working on *Ancient Ideals*. Blessed be literature, and above prose literature, blessed be poetry. It was

my early love, and now that I am old I love it more profoundly and with more insight. Reading Shakespeare gives me intense happiness.

Professor Charles Eliot Norton's course at Harvard in the history of art set me to thinking on painting, sculpture, and architecture. A year after graduation I saw my first great collection of pictures, the Dresden Gallery ; the impression made by the Sistine Madonna has endured. Yet I did not awaken to painting till some years later during my first stay in Rome. In the meanwhile I had been stirred by the Elgin Marbles and had seen Athens.

In Rome I was studying the antique for *Ancient Ideals*, and was avoiding the Sistine Chapel till I should have acquitted myself with the pagan statuary and ruins. A rumour spread that the Pope was sick, fine old Leo, the last scholar and gentleman to sit in the Papal Chair. Later I saw his face of alabaster in the Sala Ducale of the Vatican. If he should die, the Sistine might be closed, and the papal and " black " galleries of painting and perhaps the churches be barred to visitors. So I gave up my antique, and rushed to see the Sistine Ceiling. For weeks I steeped myself in its prodigiousness and in the other frescoes and canvases in Rome. From their enthralling beauty it was hard to take myself back to the old marbles and the ruins of the Forum. The beauty of the Roman paintings was a moving experience.

I have cared just as much for sculpture. But in my first stay in Rome the new treasures of the

Thermae Museum were not yet found ; and few of the statues in the glorious Vàtican Gallery or in the Capitoline are of such supreme quality as Michelangelo's Ceiling or Raphael's *School of Athens*. Still I really fell in love with the young Faun with a flute (doubtless restored) and a leopard's skin over his shoulders, who stands in woodland reverie opposite Father Nile in the Bracchia Nuova. For the great thrill of Greek art one must be on the Acropolis of Athens or in the Elgin room, dismal as it is, in the British Museum. In that room my mind has always felt the calm of immortal beauty.

I

The Imaginative Arts

The imaginative arts are means of human expression. They are not instruments or methods of investigation. Unlike science or philosophy, they neither investigate nor record facts, whatever store of knowledge and experience the artist may possess and bring to bear upon his work. And even though he may have accumulated information for the particular work in hand, a novel of manners, for example, or a " historical " painting, this is but preparatory to the artistic effort. The function of art, by which I mean the arts of imaginative expression, is to give utterance and form to the content of human life—thought, action, conviction, feeling, emotion—and to the setting, the natural environ-

ment, in which humanity acts and thinks and feels.

A work of art has a kind of end or consummation in itself. A statue or a poem or a symphony is not a utensil, like a plow or a speaking trumpet, which are tools serving a useful purpose, and made for this reason. But the creations of fine or imaginative art are intended to give pleasure or stimulate thought or feeling, without regard to any further use.

To this end they must have effective qualities—beauty, rhythm, symmetry, harmony, order, appropriate unity, composition. Such qualities charm the eye or ear, and through the senses may carry onward their pleasing appeal to the apprehending or contemplative mind. These captivating qualities are manifested in sculpture and painting through form and colour, in music through sound, and in poetry or imaginative prose through rhythmic and melodious words expressing a consonant and moving meaning.

But the pleasure-giving qualities of a work of art need not be such an end-all as to enstye the votary in their bewitchments. Rather they should suggest further meanings, and incite to their realization. The qualities of a work of art may serve as revelations of the linked significance of life.

Of course such linked significance depends for its range and profundity on the individual hearer or beholder; it varies with his capacities and becomes part of their activity. Thus the values which we draw from a work of art, just as from any other object or experience of the outer world,

resolve themselves into the functioning of our own natures. Human values and human functionings seem convertible terms. I have spoken of this before, and its bearing may be taken for granted when I speak of the value of works of art.

During the period of its composition the work of art is an activity or functioning of the artist's faculties. Nor does it cease to be an activity when, completed, it works upon those to whom it appeals. As it was an energizing of its creator, so it continues as an energy affecting the hearer or beholder. Its pleasing or satisfying qualities did not become static or passive upon its completion ; they continue active or dynamic in their impressions or effects, and are still to be regarded as energies. They should be taken for what they actually are and not as representing some quality or entity conceived as unchanging and non-energizing. Because of the opposite, and one may say classical view, analyses and definitions of beauty, goodness, fitness, and the like have proved unconvincing. They are apt to treat active and dynamic qualities as static and changeless ; treat them as enshrined and motionless, whereas they are alive and moving in their effects.[1]

[1] Homer and other poets treat beauty as an activity or energy. His numerous uses of καλός or " beautiful " show this ; its constant application to conduct, for example. See *Ancient Ideals*, i. p. 184 *sqq*. Helen is living and breathing beauty—not static, most dynamic is her charm, moving all men, launching a thousand ships and firing the topmost towers of Ilium.

We are compelled to separate here from the divine Plato,[1] with whom the idea of Beauty, like the idea of the Good, seems to have presented an absolute entity, not waxing nor waning, nor apparently working in any way save by being what it is unchangingly and eternally, and the object of the noblest and truest desire. Modern thought, as for example, in physics and biology, has become dynamic, and is but little concerned with unchanging substances and metaphysical entities. Therefore the entrancing concepts of Plato seem to us something like the *noumena* of Kant ; with these underlying inconceivabilities present-day thinking tries to have little to do.

To us the qualities of beauty and grace, and of all loveliness and good in art, have life and reality as activities, like a good deed, or beautiful action, or a stirring oration. A symphony is beautiful or satisfying in its action, like changing winds and clouds of sound. It may be a vehicle of moving meaning, but has no unchanging stable quality, no static beauty ; because it has no static existence. Action is its being. Likewise an epic poem moves and lives in action. The Odyssey has no moveless beauty, but the beauty of heroic and romantic action. Its words are winged. Even more palpably a drama is centred, focused action, an unpausing

[1] Or rather, perhaps, from my notion of Plato's meaning. Everyone understands Plato according to the cast of his own mind—or after his own heart. Plato's protean elusiveness is beyond that of other great men.

utterance. A lyric is a quick flow of feeling and perception.

In these respects painting and sculpture differ from poetry and music in the nature of the medium used. As we all know, certain modes of life and action are more suitable for expression in words, while others lend themselves to plastic or pictorial art. The action of the statue or picture should be such as may please when seen painted or carved in a stable medium. But it is only the medium, the pigment or marble, that is stable. The subject of the composition is action, just as much as if it were an incident of a poem. And this though the setting be one of apparent calm, like an interior where at dusk a single figure sits in meditation. Or if the subject of a painting be a landscape, it has life and action, however soft and enfolding be its mood. Even a portrait has action, must be alive.

Since art is an expression or presentation of some phase of life, it is necessarily a shaping and an interpretation on the artist's part of whatever theme he is presenting. There can be no impropriety in speaking of art as an interpretation of life.[1]

Again, in fulfilling its function of expression, as well as its purpose of pleasurable stimulation, art

[1] I am thinking of art mainly as a means of expressing living themes. Beauty exists also in line and pattern, as in architecture above all, and on the surfaces of vases which may (like buildings) be useful as well as ornamental. Even such beauty seems to me an activity in the faculties of designer or beholder.

selects, chooses, discriminates, and rejects. Its presentation, say, of relations among men or the relationship of men to their environment, cannot fail to carry some appraisement. The work of art reflects or interprets and presents the data of human fact and interest according to the artist's temperament, insight, and faculties. It represents his appraisal or judgement of life, and is therefore a judgement or criticism even as it is an interpretation.

Stress should be laid upon the verb *is*. In itself the work of art *is* a judgement or criticism of life. This is far from meaning that art should be explicitly didactic. To sermonize is not the office of poetry ; nor need sculptured forms or a landscape announce the artist's intent to point a moral or inculcate religious truth. Art's business is to set forth life, and not to preach a sermon upon it. The work of art in virtue of its existence is selection, appraisal, judgement. Just by being what it is, it offers an appraisal and judgement of its theme, and even of matters imagined in way of contrast. What a judgement and estimate of life is the night-scene in Achilles' tent between Achilles and Priam, in the last book of the *Iliad* ; or, if one will, what judgements upon life are the *Iliad* and *Odyssey* throughout. Another judgement and appraisal are the plays of Shakespeare. In sculpture a broad and general judgement, set in calm modulation, is the frieze of the Parthenon ; and in painting, why not Raphael's *School of Athens* ? But who cannot bring together myriads of examples ?

My historical conscience here pricks me to admit that all we call art has been, and still may be, about as many things as life itself, and fulfil many kinds of functions. The sculpture and stained glass of Gothic cathedrals were intended to convey definite religious convictions, especially to the unlettered. We know this, but also see that, apart from dogmas to be taught, this glass and sculpture are expressions of the manifold of human life.

II

Art's Value and Verity

Now, more directly, as to the values and verities afforded by works of art. The views upon this all too elastic topic hang upon the varying tempers and capacities of that large part of mankind who in any way care for the arts or profit by them. I can only set down how it seems to me.

The most obvious human value of any poem or picture consists in the pleasure or satisfaction and the stimulus it brings. This much seems clear, but is not the whole story. For a profounder criterion of value lies in the character of sentiment and thought aroused. For my part I have not given up the classical conviction that a work of art should have ethos, be possessed of impressive and beautiful qualities calculated to arouse noble thoughts and sentiments. By the latter I intend such as bear due relation to the whole co-ordinated and distinctively

human welfare of the individual experiencing them. Which means his welfare not merely as an individual, but as a member of a society in which he is inextricably involved.

It lay within the conception of ethos that the sentiments aroused should be those of a free and self-controlling being, and not of one who is the slave of passion ; it included another principle, that a work of art, a drama or a statue will not arouse noble and just sentiments unless it embodies truth. In fine to have profound and enduring human value, a work of art must be true.

This validity or truth consists, of course, in correspondence with some actually or potentially existing prototype, some related actuality or possibility either in nature or in human life. It must correspond with the at least conceivable reality of that which it is intended to represent.

One may put the matter more plainly. In fiction, a drama for example, there is the outline of fact or occurrence, the plot, the action. This need not correspond with anything that has actually taken place, and yet should be intrinsically or imaginatively possible. Beyond this quality of possibility, or, better, probability, in the plot, the truth of the drama lies in the thought and feeling, the words and conduct of the *dramatis personae*. They should feel and speak and act as such persons under such circumstances might feel and speak and act. This is the truth to human nature which the drama should present. Not that the language of great poetry, any

more than the forms of great sculpture, should be held down to the usage of men. The poet's imagination must have scope to relate the utterances of his characters to general values and general truths. The language of tragedy is not that of the detail of daily squalor ; but is vital with imagery and uplifted by over-arching statements that fling their verities across time and space — like the language of Shakespeare.

The drama should also embody truth, " ethical " truth, in the results or consequences of the speech and conduct of its characters ; should correspond, that is to say, with the laws or sequences observed in human affairs. This kind of ethical truth, combined with truth to the all-pervading all-relating verities of human nature, makes the truth of *Lear*, *Macbeth*, or *Othello*.

The truthfulness of a work of art may be analogous to the truthfulness of a proposition in science or philosophy. Analogous, but not the same. The difference in their truthfulness is partly due to the unlikeness in purpose and method of the two, the purpose of science being to investigate and accurately describe, while the purpose of art is to express and present. More fundamentally the difference is due to the phases of human faculty active in the one or the other. Those active in science or philosophy belong chiefly to the intellect ; but works of art are the creations of a more genial union of feeling and imagination aided by craftsmanship.

In scientific investigation and the descriptive

statement made carefully to correspond, feeling or emotion might blur or distort the intellectual insight. Yet even in scientific investigation or philosophic thinking, some intensity of feeling, some stirring of mood may be suggestive or may impart energy to the needed scientific or philosophic imagination, and may intensify the investigator's love of truth. Feeling may even check the results of reasoning, and, assuming the guise of morality or common sense, may bring those results before the appellate court of the whole man or general human experience.

It is otherwise with art, or, to be specific for the moment, with poetry. Here intuition and feeling lead ; they are the impulse. Not only do they start the constructive imagination, but continue to impel it in the performance of its creative or architectonic rôle. The intellect, reason, joins with the imagination, instructing, shaping, checking its action.

The validity or truth of any poem is rooted in feeling as well as thought. Hence the basis of its truth, or at least the basis of its correspondence with human nature, may be broader than the basis of a scientific principle, which is thought alone. A poem may have validity as an expression or judgement springing from the whole nature of the artist and presenting the most catholic truth that is in him.[1] Whether the poetic truth be surer than the scientific or philosophic is another question. The answer

[1] Compare with this the remarks of Dr. A. N. Whitehead in Chapter V., " The Romantic Reaction," of his *Science and the Modern World* (1925).

may depend on whether the element of feeling, which impels the imagination and forms part of the foundation of poetic truth, is more effective in contributing breadth or more detrimental in disturbing thought.

There is something more to be said by way of comparison between the truth which art may express and the conclusions of science. For art draws verities from a range of experience which the methods of science, and even of philosophy, cannot thoroughly explore. And it may be that the careful, well-weighed steps of science can never overtake the horizons of human thought and conduct which the discoveries of science have helped to enlarge.

To my mind the following train of considerations has some bearing upon this. To-day the cell is treated as the unit whose intricate dividings produce all animal and plant organisms. But the cell's complexity is still unplumbed, and its imperfectly known phenomena as yet lead to no foreknowledge of the behaviour of the organism, the human organism, for example, which is a multiple complexity containing millions of co-operating and competing cells. General physiology is also advancing to closer descriptions of bodily processes ; yet, like the study of the cell, each advance shows us how much we do not know. No more than cytology does physiology offer a basis of conclusion enabling us to pass upon the conduct of a man fulfilling human ends.

This baffling complexity becomes twice confounded when one adds the psychical phase, and

joins mind to body. There is no chemistry of the mind, nor any Newtonian or Einsteinian mechanics of its phenomena, nor have its nuclei or cells ever been seen by the biologist. But the activities of the body, with the somehow interrelated activities of mind, make human conduct, which cannot be analyzed or adjudged by methods that have not yet exhausted the behaviour of a cell.

Turning next to the psychologists, we find them battling as to method and without accord in their conclusions. The introspectionists, their opponents say, are grasping at the intangible, and trying for definition in terms of the as yet undefined. Behaviourists and laboratory experimentalists are cleverly studying the effect of stimulated glands on human conduct, and have their tests of psychophysical deficiency. They say less as they approach the distinctive action of the mind. Any enlightenment offered by our friends the Freudians touches pathological cases mainly, or would prove us all to be such.

So difficult is it to apply scientific methods to the conduct of individual men and women. But our multiple perplexity is again multiplied when man is seen as a member of society. The sciences—if they are such—which investigate society have loosened their habits and fallen into dissolute ways. Physics, chemistry, and even less austere biology, look askance at the licence of anthropology and sociology. If the former is vague in aim and loose in method, the latter is sentimental and looser.

Anthropology, rough-neck explorer as it is, knows that it has reached few conclusions, and those mostly negative ; while the benevolent conclusions of sociology are approved chiefly by " social workers ".

Anthropology investigates the lower strata of human and social activities past and present. Sociology pushes upward, hoping for results which may improve modern society. Both seem historical in method, and perhaps are sciences in about the sense in which History is a science.[1] Their data, at all events, form part of History as the description of all phases of the human past, a store from which all men, according to their lights, draw matter for their convictions.

In some rude way, like that of our own plain selves when we are not scientific, artist and poet inform themselves with human experience and imbibe the time-honoured principles of conduct and its consequences. Histories, traditions, legends enter their equipment. They join with the personal experience of each artist in forming his estimate of life. They affect his temperament. They become informing ingredients of his feeling and imagination; according to the power of his genius they will be transformed and embodied in the compositions which express him. Thus they enter all the great creations of poetry, sculpture, and painting.

Art is an exponent of experience, traditional as

[1] The terrific *Sociologie générale* of Pareto (French translation, 1917, 1919, two large volumes) endeavours, perhaps successfully, to reach a surer method for Sociology.

well as personal, and a symbol—a casting together into concrete expression—of human conduct, upon which implicitly it passes judgement. And since feeling, impulse, intuition, as well as rational knowledge, enter the imagination and its creations, art may draw upon every strand of human conviction. Thus may art, rather than science, yield the fullest expressional synthesis of life, and carry the broadest truth available for man.

And the symbol is the proper vehicle. Current experience, daily intercourse, mental and social habit, temperamental attitude, indeed all the common factors of human life, are ill-suited to close statement or description. One does best by casting the matter together in a symbol, a concrete representative instance of the general elements which seem included or principles which seem involved. This might be called the office of art. Some readers of Plato's *Republic* think that its beautiful fictions, of the Shadow-seers in the Cave or the post-obit experience of the man named Er, carry more truth than the dialectic of that masterpiece. But it is not in the *Republic* alone that the poet-philosopher illustrates this. Throughout the Dialogues, he is conscious that dialectic cannot adequately present truth. Perhaps all the truths of philosophy extend *beyond* ; are too rich and manifold in meaning, too lofty and far-reaching, to be compassed and analyzed by the reason or fitted to its forms.

Poetic truth lies in the poem's fulfilment of tested principles of human life and conduct. In

poetry, that is true which presents the general ways of human life and the effect of Nature upon man. The characters in narrative poetry should act as such characters would act, and their fortunes should be the result of their characters and situations. Pursuing this grand accord, epic poetry judges life and presents its abiding teachings. The truth of lyrical poetry lies in expressing veritable human moods or emotions, and the effect of occurrences or the influence of Nature upon man and his responding mood. It is false when it expresses vamped up sentiments. Here it is hard to draw the line, since what may be real with certain natures may seem to others false.

This presentation of general truths which is proper to art is related to the *ideal*, which art may properly and even truthfully present. The ideal is a sort of strict unity attained by discarding whatever is irrelevant to the character, the occurrence, or the feeling to be set forth, and by retaining and even emphasizing whatever is pertinent and enhances it. This is the supreme unity exemplified in Michelangelo's *Creation of Adam* on the Sistine ceiling. By genius and training quite as much sculptor as painter, he has made the unity as close as would have been required by relief sculpture.

Naturally the idealism and corresponding unity of an epic poem are more comprehensive. The poet's mind may be set upon certain characters and their appropriate fates ; and with broad sweep the poem will move on to the event. But the richness of incident, which enhances the interest and may

even strengthen the movement of an epic, would, in a lyric poem impair the stricter unity of mood which should possess it. The lyrist can let no impertinence distract him from the saliency or subtlety of the feeling which is to be rendered. A supreme instance of the outline of incident proper to the structure of a lyric narrative is Pindar's Fourth Pythian Ode telling how Jason won the Golden Fleece.

Upon this basis of the ideal which lies in unity of theme and mood, the poet justly seeks to raise the qualities of the epic hero or the lyric emotion, perfect them, and so make them beautiful. Provided this be done in true proportions, with no element disproportionately exaggerated, the result may appear not only grand and beautiful, but as an enhancement of the truth of his creation. No such creature as Achilles ever lived, and yet the very truth—the very truth of life's enhancement—is in him. Much the same may be said of that grand sculptured form, the "Theseus" of the Parthenon pediment, or of Michelangelo's quite comparable fresco of Adam before referred to. No such human figure may ever have been seen, yet truth vies with beauty in each of these creations.

III

The Imagination in Shelley's Defence of Poetry

Poetry and art are thought of as creatures of the imagination. If we understand the imagination to

include whatever phases of mental faculty contribute to its action, we may accept it as the creative and unifying energy in the arts of human expression. Conceived through imagination, brought into being under its power, the completed work of art animates the imagination of those who hear the poem or see the statue. Their imaginations, thus animated, are for them a source of pleasure and, when rightly moved, a cause of moral good.

When rightly moved—a timid and perhaps question-begging clause. I find no such qualification in Shelley's beautiful *Defence of Poetry*, which assumes the imagination's nobility. Curiously enough, only lately have I come upon this veritable store of poetic insight.

"A man, to be greatly good, must imagine intensely and comprehensively; he must put himself in the place of another and of many others; the pains and pleasures of his species must become his own. The great instrument of moral good is the imagination; and poetry administers to the effect by acting upon the cause. Poetry enlarges the circumference of the imagination by replenishing it with thoughts of ever new delight, which have the power of attracting and assimilating to their nature all other thoughts, and which form new intervals and interstices whose void for ever craves fresh food."

It is not for me to say with Shelley that poetry is the vehicle of the greatest good and happiness for men—it does not speak to all. But I will let the poet-essayist speak for himself in a few paragraphs.

He shows in his own brilliant way that poetry does not preach, meaning that it is not the function of the poet to inculcate the particular religion or ethics of his time.

" The poetry of Dante may be considered as the bridge thrown over the stream of time, which unites the modern and the ancient world. The distorted notions of invisible things which Dante and his rival Milton have idealized are merely the mask and mantle in which these great poets walk through eternity enveloped and disguised. . . ."

" All high poetry is infinite ; it is as the first acorn which contains all oaks potentially. Veil after veil may be undrawn, and the inmost naked beauty of the meaning never exposed. A great poem is a fountain for ever overflowing with the waters of wisdom and delight ; and after one person and one age has exhausted all its divine effluence which their peculiar relations enable them to share, another and yet another succeeds, and new relations are ever developed, the source of an unforeseen and an unconceived delight."

Shelley possessed an analytic and metaphysical mind, and, had he outlived the flush of his immortal youth, he might perhaps have become as scientific as Leonardo. He harboured no prejudice against either philosophy or science ; but, as was proper for him to do, maintained the supremacy of poetry, even as a means of enlarging the knowledge and raising the morals of mankind. So he continues in his *Defence* :

"But poets have been challenged to resign the civic crown to reasoners and mechanists, on another plea. It is admitted that the exercise of the imagination is most delightful, but it is alleged that that of reason is more useful. Let us examine, as the grounds of this distinction, what is here meant by utility. Pleasure or good, in a general sense, is that which the consciousness of a sensitive and intelligent being seeks, and in which, when found, it acquiesces. There are two kinds of pleasure, one durable, universal, and permanent; the other transitory and particular. Utility may either express the means of producing the former or the latter. In the former sense, whatever strengthens and purifies the affections, enlarges the imagination, and adds spirit to sense, is useful. But a narrower meaning may be assigned to the word utility, confining it to express that which banishes the importunity of the wants of our animal nature, the surrounding men with security of life, the dispersing the grosser delusions of superstition, and the conciliating such a degree of mutual forbearance among men as may consist with the motives of personal advantage."

Shelley admits that "the promoters of utility, in this limited sense, have their appointed office in society. They follow the footsteps of the poets, and copy the sketches of their creations into the book of common life. . . . The exertions of Locke, Hume, Gibbon, Voltaire, Rousseau, and their disciples, in favour of oppressed and deluded humanity, are entitled to the gratitude of mankind. . . . But it

exceeds all imagination to conceive what would have been the moral condition of the world if neither Dante, Petrarch, Boccaccio, Chaucer, Shakespeare, Calderon, Lord Bacon, nor Milton, had ever existed ; if Raphael and Michael Angelo had never been born ; if the Hebrew poetry had never been translated ; if a revival of the study of Greek literature had never taken place ; if no monuments of ancient sculpture had been handed down to us ; and if the poetry of the religion of the ancient world had been extinguished together with its belief. The human mind could never, except by the intervention of these excitements, have been awakened to the invention of the grosser sciences, and that application of analytical reasoning to the aberrations of society, which it is now attempted to exalt over the direct expression of the inventive and creative faculty itself".

One might call poetry the interwoven sum of the knowledge, thought, and feeling of the race cast together in symbolical and consummate expression. Then we can follow Shelley as he argues that Poetry " is at once the centre and circumference of knowledge ; it is that which comprehends all science, and that to which all science must be referred. It is at the same time the root and blossom of all other systems of thought ".

It is easy to follow him through the next happy page. " Poetry is the record of the best and happiest moments of the happiest and best minds. We are aware of evanescent visitations of thought and feel-

ing sometimes associated with place or person, sometimes regarding our own mind alone, and always arising unforeseen and departing unbidden, but elevating and delightful beyond all expression : so that even in the desire and regret they leave there cannot but be pleasure, participating as it does in the nature of its object. It is as it were the interpenetration of a diviner nature through our own ; but its footsteps are like those of a wind over the sea, which the coming calm erases, and whose traces remain only, as on the wrinkled sand which paves it. These and corresponding conditions of being are experienced principally by those of the most delicate sensibility and the most enlarged imagination ; and the state of mind produced by them is at war with every base desire. The enthusiasm of virtue, love, patriotism, and friendship, is essentially linked with such emotions ; and whilst they last, self appears as what it is, an atom to a universe. Poets are not only subject to these experiences as spirits of the most refined organization, but they can colour all that they combine with the evanescent hues of this ethereal world ; a word, a trait in the representation of a scene or a passion, will touch the enchanted chord, and reanimate, in those who have ever experienced these emotions, the sleeping, the cold, the buried image of the past. Poetry thus makes immortal all that is best and most beautiful in the world ; it arrests the vanishing apparitions which haunt the interlunations of life, and veiling them, or in

language or in form, sends them forth among mankind, bearing sweet news of kindred joy to those with whom their sisters abide—abide, because there is no portal of expression from the caverns of the spirit which they inhabit into the universe of things. Poetry redeems from decay the visitations of the divinity in man.

" Poetry turns all things to loveliness ; it exalts the beauty of that which is most beautiful, and it adds beauty to that which is most deformed ; it marries exultation and horror, grief and pleasure, eternity and change ; it subdues to union under its light yoke all irreconcilable things. It transmutes all that it touches, and every form moving within the radiance of its presence is changed by wondrous sympathy to an incarnation of the spirit which it breathes : its secret alchemy turns to potable gold the poisonous waters which flow from death through life ; it strips the veil of familiarity from the world, and lays bare the naked and sleeping beauty, which is the spirit of its forms."

The last sentence is a pearl of truth and beauty. Transfusion into poetry—into art—makes a new world of common things, in which we peer about delightedly as if for the first time we had stepped on enchanted shores. Natural science also has its way of making all things new and wonderful ; and some of us are blest with the constant faculty of finding wonder and delight in any leaf or insect's wing. But now I am speaking, with Shelley, of poetry, and would pause a moment with him and

Wordsworth to see whether there is not some physics or quasi-mechanics in the poetic art. It has its medium and its craft, as music has, and painting and sculpture. Its medium doubtless is melodious language, proceeding in measured or rhythmic lines. Both of these poets expressed interesting views on the office performed by this poetic frame.

Shelley seeks a profound, even metaphysic reason : " Sounds as well as thoughts have relation both between each other and towards that which they represent, and a perception of the order of those relations has always been found connected with a perception of the order of the relations of thoughts. Hence the language of poets has ever affected a certain uniform and harmonious recurrence of sound, without which it were not poetry, and which is scarcely less indispensable to the communication of its influence than the words themselves, without reference to that peculiar order. Hence the vanity of translation ; it were as wise to cast a violet into a crucible that you might discover the formal principle of its colour and odour, as seek to transfuse from one language into another the creations of a poet. The plant must spring again from its seed, or it will bear no flower—and this is the burthen of the curse of Babel."

Wordsworth is more explicit. He is saying that poetry seeks to arouse excitement, with an " overbalance of pleasure ", with precautions taken against excessive pain ; and continues : " Now the co-presence of something regular, something to which

the mind has been accustomed in various moods and in a less excited state, cannot but have great efficacy in tempering and restraining the passion by an intertexture of ordinary feeling, and of feeling not strictly and necessarily connected with passion. This is unquestionably true ; and hence, though the opinion will at first appear paradoxical, from the tendency of metre to divest language, in a certain degree, of its reality, and thus to throw a sort of half-consciousness of unsubstantial existence over the whole composition, there can be little doubt but that more pathetic situations and sentiments, that is, those which have a greater proportion of pain connected with them, may be endured in metrical composition, especially in rhyme, than in prose. The metre of the old ballads is very artless ; yet they contain many passages which would illustrate this opinion. . . . Shakespeare's writings, in the most pathetic scenes, never act upon us, as pathetic, beyond the bounds of pleasure—an effect which, in a much greater degree than might at first be imagined, is to be ascribed to small, but continual and regular, impulses of pleasurable surprise from the metrical arrangement."

Coleridge also remarks that he would trace " the origin of metre to the balance in the mind effected by that spontaneous effort which strives to hold in check the workings of passion."

All this seems to be true ; and I have noted another principle which is not unrelated. When I was in college, Prof. Adams Hill, I think, gave as a

subject for a " theme "—" Why does the expression of emotion naturally take a rhythmic form ? " I have since thought of this, and have come to deny it. A few years ago, what seemed the truth of the matter struck me and I put it in my note-book : " The expression of *recalled* emotion (as in poetry, etc.), naturally takes a rhythmic form." And only the other day in Wordsworth's famous " Preface " on *Poetry and Poetic Diction* I came on a phrase which had not, I think, arrested my attention before : " I have said that poetry is the spontaneous overflow of powerful feelings : *it takes its origin from emotion recollected in tranquillity.* [Italics mine.] The emotion is contemplated till, by a species of reaction, the tranquillity gradually disappears, and an emotion, kindred to that which was before the subject of contemplation, is gradually produced, and does itself actually exist in the mind. In this mood successful composition generally begins, and in a mood similar to this it is carried on ; but the emotion, of whatever kind, and in whatever degree, from various causes, is qualified by various pleasures, so that in describing any passions whatsoever, which are voluntarily described, the mind will, upon the whole, be in a state of enjoyment."

So Shelley and Wordsworth describe the function of melody, measure, rhythm, rhyme, in poetry. Of course, no one has succeeded in explaining it or accounting for the pleasure or pleasurable control which it brings to us. For English-speaking people Shakespeare is the standard exemplar ; and much

private enlightenment can be had by following through the plays his unerring use of verse and prose ; but it is risky to try to state the principles of his infallible selection. Of course one sees in a general way that he always uses prose in his buffoonery or low comedy passages. In *The Tempest* the drunken Trinculo and Stephano speak prose ; but Caliban, a unique and romantic monster, uses verse. We can think of some sort of yearning ideal running through his sense of dispossession : " This island's mine ! " And perhaps we can guess that Shakespeare never gives verse to any character altogether incapable of idealism—never is Falstaff given one line of verse. I fancy any one of us would admit that the inimitable Falstaff is not poetic.

It is also interesting to observe the alternate use of prose and verse by the thoughtful, or the delightfully poetic, or the sublime and tragic, characters. Rosalind, Portia come to mind, Hamlet, Macbeth, Othello. Lear speaks no prose.

In every instance one agrees at once that what is said in prose would have been stilted or absurd in verse ; and that what is put in verse could not have been expressed in prose. For one thing, obviously with these lofty or beautiful people, prose is always of the incidental and particular, while poetry gives voice to what is more beautiful and universal in their thoughts.

The speeches of Brutus and Antony to the Roman populace illustrate another point. The lofty-minded, scholarly Brutus is elsewhere both unreasonable and

poetic; but here the model hero and future martyr of liberty reasons didactically with this light-headed mob. He speaks prose, like Hamlet in addressing the players, not because his sentiments lack general truth, but perhaps because they are confined to rational argument. Antony makes no such pretence. He lets his own feelings appear through affected concealment, and gradually draws his audience away from Brutus, moves their feelings, and rouses them to tears and rage in the most dramatic and poetic of all popular harangues. We have all "spoken" it at school, and are still swept with admiration upon reading it in our grey maturity.

At the end it is safest to say simply that Shakespeare's characters use prose where prose is suitable and verse where verse is best. It is an illustration of the inerrancy and richness of his taste. As he passes from prose to verse, or back to prose, he may avoid monotony, but at all events enhances the beauty and fascination of the play. In the French drama, Racine, of course, uses only verse, and, so far as I remember, Molière writes the dialogue of his plays either entirely in verse or entirely in prose.

IV

The Truth of Poetry

The worth of art to men draws exemplification from music, as well as from painting, sculpture, and imaginative literature. I am fearful of the first, of

which I know too little. But I do know that sculpture and painting afford infinite examples of art lending its values and its just judgement upon life to men of all generations. From India to Japan, the carved images of the Buddha and enlightened Bodisatthvas have presented one view of life and a judgement upon it as legible as was the handwriting on the wall to king and Hebrew prophet. Their beauty has carried peace not only to the followers of that religion and philosophy, but to many of us who are neither Asiatics not Buddhists.

Comparable with these stone Buddhas, but offering a contrasted rule of life, are our Christian crucifixions, which have brought home to millions the discipline of suffering and atonement and the rapture of devotion. Another form of truth, another judgement upon life, and many modes of joy, are yielded by the Greek marbles. The gladness, the worth, the beauty, the closing pathos, of mortality is eloquent in them. They embody the Greek experience, the Greek temper, and Greek thinking. They match the ethical wisdom of Pindar, Aeschylus, Sophocles. The Parthenon frieze conveys the calm of life's attainment in tones not unlike the peace surrounding the last hours of Socrates in Plato's *Crito*.

We might continue with the clustered beauty and austerity of Gothic sculpture and the glories of Italian painting. But poetry, epic and dramatic, is more explicit for our purpose. Just as surely it affords pleasure, and more articulately than plastic art it gives account of the acts, the goods and ills of

men, and sets forth human truth. So I will take from poetry my illustrations of the value and verity conveyed through art.

The human value of great poems is as the starry heavens. They uplift the mood, they flood the mind with the delight of life, they enlarge and enlighten the understanding and try the soul through their plenary contents of joy and fear and pity. Many of us would give these poems a high place among the influences which have enriched our minds, ennobled our characters, and increased our knowledge of life.

As everyone has known from childhood, the tale is more effective than precept or sermon. It is the better teacher. But the teaching which shall tell us of the natures of men and women about us, and guide our lives through this world of trial and opportunity, must be valid, must be true. It must agree with the massed testimony of human experience. Our great poems, to be worthy teachers, must be true in this sense.

If in this sense they prove true, they will be effective according to the measure of their excellence as narrative or dramatic poems—according to the measure of their charm and beauty, their power and convincingness, and the aptness of their language; in a word, their artistic qualities. The unhurrying swiftness of the Homeric epics, their power without strain, their simple dignity, the beauty and fitness of their language, and the human interest of the story, have made them mighty to teach even as they

have been perennial springs of pleasure. Without austerity, they were the Old Testament of the Greeks, and the later world, which discovered them once more, found delight and discipline in their narratives.

These epics are unrivalled in the completeness of the picture given of their world. All is there : the fancies, thoughts, convictions of the epic people ; their mythology, religion, code of conduct. Life is depicted on the farm, in the great house, in the little town and the assembly—whether in peace or war, at home or on the strand of the cruel sea, the epic people were always assembling for discourse and decisions, or for games or dancing, or to hear songs of gods and heroes. The panorama expands around us, chariots on land and ships at sea, pens and pasturage filled with pigs and goats and sheep and cattle. It is the early Greek world of gods and men and women, woods and fields, waters in calm and storm. All is animate with something of a like nature ; men and gods have mingled being ; every stream is divine and human, to be fallen in love with, as Tyro fell in love with the beautiful river Enipus. The gods mix ceaselessly in affairs, and divinities of island, cave, or river assist or mar the lots of men.

The Homeric relations of humanity to Nature in her manifold divineness are universal. The myths make a delightful setting ; more real to us is the pervading all-animating life ; for still with us Nature is alive. It has been variously said from

century to century that She has a soul—in Homer she has bevies of charming little souls.

As Homeric nature is naïve, so the ethical basis of human conduct is as primitive as it is true. Everyone takes whatever he can take without incurring ill from the hands of man or an avenging god. This general assumption is qualified on all sides by special relationships. Duty, like friendship and love, is a thing of special relationship, possibly of family or neighbourhood, thinning out rapidly as the radius lengthens. Husband and wife, parent and child, brothers and sisters, chieftains and followers, masters and thralls, owe duties to each other. So do those who have become guest friends or suppliants, beggars even. But with enemies or strangers on land or sea, one may properly, if not always safely, go to any length.

Thinking the Epics over, a first conviction of their truth relates to the fortunes of the chief heroes. Their fates or fortunes are so just, so in accord with their natures, and, as far as may be in this realm of human uncertainty, so inevitable. How could Achilles but have chosen warfare around ringing Troy, the glory of it, and the quick glancing life? His swift fate was just and true. On the other hand, equally just and true were the fortunes of Odysseus: that he should have counselled and fought valiantly at Troy, and that he should have guarded his head, and in the end, through epic adventure and tribulation, have reached home again, and regained his rocky little realm. He would have had a prudent

wife and faithful, who would await his coming, and not with paramour and fatal net, as Clytemnestra with equal propriety and truth awaited the home-coming of her lord. Agamemnon's fate was in quittance of his conduct—from the sacrifice of Iphigeneia to the rebuff of Apollo's aged priest—and of his ὕβρις in words and acts.

Besides the just event of their lives, epic heroes speak and act true to their characters. This consistency and truth to character may be followed through the lives of Achilles and Odysseus, and is shown beautifully in the way the noble Sarpedon always acts true to his leading motive, which is honour, αἰδώς, shame at all things shameful and reverence for all things to be revered.

The Homeric ethical scheme represents the very truth of human nature and motives of conduct. The crude base, as already said, lay in the impulses of passion and desire. This is built upon through shrewd inductions from experience and the perception of mortal limitations. Mingled with these perceptions are sentiments of duty and righteousness, which, if partly instinctive in origin,[1] grow with intelligence and knowledge. Principles of conduct are fashioned with Greek intelligence from the Homeric store of experience and judgement upon life. The latter is bitter enough, for the *Epics* are stamped with the tragedy of mortality. This tragedy may be suspended, or, again, intensified, by the epic

[1] As in the parental instincts of protection, common to brutes and human beings.

eagerness. But it is always there, and the highest epic morality is set upon it.

As when Odysseus disguised in rags warns Amphinomous, the least evil of the wooers, to remove from among them : " Of all that earth nourishes, nothing is feebler than man, who, so long as the gods give him might and sustain his strength of limb, thinks ill will never come upon him. But when the happy gods bring on him woes, he has to bear them with enduring heart. For I too might have been prosperous among men, but I did many infatuate deeds, letting my strength do its pleasure, and relying on my father and my brothers. Therefore let no man do evil, but let him possess in silence the gifts of the gods whatever they may give." When the wooers lie in their blood, the same clear-seeing man checks the shrill rejoicing of his old nurse : " In thy soul, old woman, be glad, and restrain thyself, nor cry aloud. It is ill to exult over slain men. These the fate of the gods overcame and their evil deeds. For they honoured no one of mortal men, neither high nor low who came to them. Wherefore through their wicked folly have they met a shameful death."

I think no one can impugn the validity of Homeric ethics, the fruit of simple conditions, but carrying truth for times to come. Slightly varying our point of view, we observe the truthfulness of sentiment and situation. An example is that crowning passage of the *Iliad*, the scene between Achilles and Priam, who has come to beg the body of his son. Anguish, aged

irritation and trembling had been truly depicted in the start and progress of the night venture ; and Achilles' vengeful rage was spent before the old man, marvellously conducted through the host, appears in Achilles' tent. Two comrades are removing the evening meal as Priam enters and clasps Achilles' knees. Wonder seizes them while Priam speaks : " Think of thy father, Godlike Achilles, who with me is entering on the dreary path of old age. Perhaps neighbouring chiefs are pressing hard upon him, and there is none to ward off the war. Yet he, hearing of thee as still alive, rejoices in the hope of seeing his loved son some day return from Troy. But I am all bereft, for not one of my bravest sons is left. Most of them fierce conflict has laid low. There was one who protected the city, and now thou hast slain him as he fought for his country, even Hector. For him am I come to the ships of the Achaeans bringing thee a ransom. Reverence the gods, Achilles, and pity me as thou rememberest thy father. I have endured as no other earthly mortal has, to lift up my hands to the slayer of my son."

Achilles gently pushed him back, and both wept aloud, Achilles for his father and Patroclus, and Priam for his son. Then he sprang forward and raised the old man in pity of his grey hair. " Ah hapless ! many ills hast thou endured. How didst thou dare come alone to the ships of the Achaeans, and meet the eyes of him who has slain many and the brave ones among thy sons ? Iron is thy heart. But sit, and we will let our sorrows lie quiet in our

hearts, grieved as we are. No help will come from chill lament ; for the gods have made it the lot of wretched mortals to live in sorrow, while they are without grief." He tells of the jars of bane and chequered blessings that stand on the floor of Zeus —the gods gave to Peleus riches, power, wealth, a goddess for his wife, and then one short-lived son ; and to Priam, too, surpassing power and a wealth of sons, but now he is hemmed in by slaughter. There is more speech between the two, with surging and then quieted emotion, till, the old man's petition more than granted, Achilles prepares a bed for him in the inner room, and clasps his hand that he may have no fear. Then both sleep, their feelings purged by tears and pity. All this, incomparably told, is the epic prototype of the tragic *katharsis*, the final calm closing Greek tragedies, that " calm of mind all passion spent ", which grief still may find.

No need to comment on the truth of this great scene. Its immortal beauty and its moving power can be felt only through the hexameter of the Greek epic. Such qualities pass to no translation, which can give but the bare poles of the matter, and no notion of the beautiful ship with her sails set in the breezes of heaven. It is, however, to be noted that the truth of such scenes relates to the heights and the profundities of mortal life, which only the fulness of art can render. They do not lie open to philosophy, and still less can they be scanned or plumbed by the investigations of science.

The truth of these epic poems may be realized

from other passages, perhaps as beautiful and as subtly true, though less sublime. Turn to the *Odyssey*. Nothing could be more idyllic nor more clearly set in noble human qualities than the intercourse between Odysseus, cast up by the sea, and the matchless girl, Nausicaa. And nothing could be more true in the truth of courtesy and good breeding and the tact of human wisdom. Turning our eyes from the beauty of the converse between the two, and thinking in our own pedestrian way, we perceive in it the very truth of the moral and social proprieties; the very truth of how a pure and fearless girl would speak and act, and the very truth of how a sagacious, justly-seeing, much experienced man would approach her to seek aid.

Again, how pleasing and how admirable in their psychological truth are the scenes in the nineteenth and twentieth books when Penelope is so drawn by the talk of the unknown beggar, who is her great husband; and in sleep the two, as it were, dream toward each other; and then, after the wooers are slain, how truly consistent with the attitude of this steadfast, prudent wife, often mocked by hope and the false words of strangers, is her slow recognition of her husband making its way almost painfully against the stress of her conviction that he is dead and never will return.

One may take the story of Circe as a last example of Homeric truth. It is set on the heights of romance. But Circe's bewitchments have something of the lotus, and attach themselves to the veritable lotus-

eating nature of men. As the setting is romance, so is the action. For Hermes meets Odysseus, resolute on his way to rescue his companions, and gives him a charm against the enchantments of the lovely witch. These cannot touch him, and Circe cries, "Thou art Odysseus, of many resources, whom Hermes always told me would come returning from Troy in his swift black ship." Still the action is in romance, but readily, almost without conscious interpretation, the incidents turn to symbols of human truth, as firmly set as Odysseus of many counsels. Nor could the truths of the Circe episode be set forth otherwise with like effect and adequacy.

So these great poems mass together the experience of life, and make of it an all-compassing tale of human truth. Experience had heaped up the data. The traditions of the race, which are part of its experience, make its experience into stories, and the poet's genius gathers and renders them in such guise and beauty that they shall ever hold men's minds. The sort of truth these epics teach will outlast many systems of philosophy and many an hypothesis and fact of science.

Tragic as they are, the Homeric epics live and move with the zest and eagerness of life. When the heroes are grieved or in peril, or overtaken by fate, their affliction and lament are linked to the occasion of their woe. When their fortunes lift, they exult. Very different is the saddened and reverent movement of the *Aeneid*. Aeneas, himself none too redolent of life, is somewhat numbed by the

catastrophes through which he has passed. He has not Odysseus's confidence in his own cunning and resource. Rather he trusts submissively in the fated decrees of Jove to bring him and his household gods to their appointed seats in Italy. The voyage is a sad one. He would have been happier if permitted to raise again the fallen walls of Troy, and there quiet his sorrows tending the relics of his dead. Bitter the task laid on him to pursue those fleeing shores of Italy, and enter that land so big with war. *Italiam non sponte sequor*, he assures the hapless Dido.

The mood and purpose of the poem are hung upon the temper and career of this obedient hero. Yet the mood is Virgil's own, and not altogether born of the imperial Roman present in which this meditative tender-hearted poet lived. If Virgil feels the nobility of duty and obedience to destiny, his thought is wrapped in pity over hapless human yearnings and the sorrow of all high endeavour. His loving wisdom carries sadness without bitterness. For him there was pathos in all human life, and above other pagan hearts he felt the pathos of endeavour pressing on through pain.

Herein lies the truth of the *Aeneid.* Life is pathetic. This is one true view of it, just as one may find with equal truth that life is well worth while, that it is happy, that it is rapturous. To some eyes life discloses truly vistas of tears and yearning, like those of Virgil's world of shades, where there were also happy fields. But such happy

fields are less secure on earth than with souls resting in Elysium.

An epic or dramatic poet uses the ethical and religious convictions of his time. No man ever held to them more mightily than Aeschylus. His gods, but mainly Zeus the supreme, are less blithely human than Homer's. They have become more steadily divine and ethical. Fate is hung on conduct; it has become one with Zeus in the function of executing punishment for outrage.

The best ethics and religion of the Greece of the Persian wars are incarnate in the *Agamemnon* and the two following plays of the trilogy, which bring the tragedy of Atreus's house to its last expiation. Never with higher art, never with such dramatic power, has the curse of crime renewing itself from generation to generation been set forth in its linked causes and results. "It is the impious act which begets its kind—whereas righteous houses are blest in their fair children. The ancient Insolence engenders a young offspring-insolence in evil men at the appointed hour, in cloud of darkness an avenging daemon not to be fought off."

The value of the *Agamemnon* is at one with its validity. Its artistic excellence — its power of language, the effective beauty of its images, the energy of its climax, all raising the audience to highest tension, and then lowering them, purging their feeling at the end, these qualities and effects are inseverable from the truth, the ethical validity of the play.

Its ethical truth is impressed in three modes, which are held together by their mutual pertinency and their relation to the whole drama. There is the action of the piece, springing fatally from tragic antecedents and presaging tragic conclusions still to come ; there are next the utterances of the chorus, exhibiting the action as an instance of the resistless working of the laws which ordain the results of human conduct. These choral strophes, in the lyric mode, are a foil to the cry of Cassandra, the drama's supreme lyric note, falling upon the murder of the King within the house which he has entered from the stage. The dramatic climax is intensified by the lyric climax, which coincides with it and affords an emotional parallel and even summary of the entire tragedy. From the opening cry of the doomed prophetess, her words, ever becoming clearer, disclose the course and sweep of the tragedy, but always in lyric mode. As in a haze of blood, and then with horrid clarification, there comes to her the vision of the House netted by its crimes ; now the net is cast about the far from guiltless king. " I scent the track of crimes done long ago. That harsh chorus never leaves this house ; but bolder, having drunk men's blood, the revelling band abides of sister Erinyes, not to be cast out. One strain they sing, the primal impious act, that brother's couch so cruel found to its defiler."

To the horror of the Chorus she announces Agamemnon's death from Clytemnestra, casts off her prophet's fillets, and advances to her own

avoidless doom. For an instant she staggers back from the portal, smelling blood; then enters just as the king's death-cry is heard.

The triple intensification and pertinent explication of the tragedy are completed: for structure, the tremendous action; next the comment and presages of the Chorus; and then the lyric cry, summation of it all. This is art, the convincingness of art, the power of art to overwhelm, and the ability of art to carry truth. No painful description of actual occurrence can vie with such art in sweep and energy of truth.

Shakespeare's plays also rise from the base of the knowledge and convictions of his time. In speaking not merely of their value but more especially of their validity, we have still to treat them as art—as drama, imaginative poetry, fiction. As vehicles of truth, they are not to be thought of as histories but as creations of fancy and the dramatic genius. Even those which took their stories, and more too sometimes, from Holinshed or Plutarch, do not derive their truth from any records of fact. Such were merely the casual frame in which Shakespeare ordered the passing pomps of life and the verities of human nature. For the working of his dramatic genius the records were a convenience. They served to fit his art to the traditions and fashions of Elizabethan England. There is no need to prove this from the "Histories" which dramatize the wars and fortunes of England's fighting kings, or from the tragedy of *Antony and Cleopatra* in which

Shakespeare re-immortalized Plutarch's moderately immortal " Life ". And if the poet from his stores of thought and fancy poured beauty, truth, and some philosophy into such cups, his overthought was no stumbling-block even to the dullards in his audience. For his dramatic power wrought all ingredients into the movement of the piece, whether that was formed along the lines of some old register or was sheer invention, plot and all.

To signalize the point that the truth of Shakespeare's plays is the truth of art and not of history, *The Tempest* may serve as an extreme illustration, indeed a *lucus a non lucendo*. For it is an unmistakable creature of fancy and imagination, and no " source " has been found for it. As one of the most beautiful and entrancing of compositions, its value might be granted. Yet the delight afforded by this lovely play may not altogether be severed either from the criticism which it offers upon life, or from the aloofness of its view and its presentation of so much that is true for the contemplative mind—possibly the manner of mind symbolized by the words of a Chinese sage : " The world is all as you see it here." Life, the world, is anything but dust and ashes in *The Tempest* ; it is a thing of beauty and a joy. Yet the mind may look on with detachment, and take the pageant for what it is. This is an amicable view of life and may carry truth.

Not the faintest tinge of Christian sentiment in *The Tempest*. It is a loveliest bit of the period's romantic paganism, which serves the remoteness of

the setting, the aloofness of this high comedy. The isle is enchanted ; veils of enchantment cloud the minds of king and courtiers, and strange sounds fool the drunken clowns. None knows as well as Prospero the insubstantiality of these agents of his purpose, these creatures of his wand. If in his early time when he lived a recluse duke in Milan " bettering his mind " and "neglecting worldly ends", he had put pomp beneath him, now in these years on his magic isle he has finally realized the mummery of things, and has more surely found himself amid the phantoms of experience. In some such resultant mood he says :

> I must
> Bestow upon the eyes of this young couple
> Some vanity of mine art : it is my promise.

So the Iris, Juno, Ceres vision wraps the senses of Ferdinand and Miranda, till Prospero, remembering the drunken conspiracy, dispels the vision suddenly, saying to the startled Ferdinand :

> You do look, my son, in a mov'd sort,
> As if you were dismay'd : be cheerful, sir.
> Our revels now are ended. These our actors,
> As I foretold you, were all spirits, and
> Are melted into air, into thin air :
> And, like the baseless fabric of this vision,
> The cloud-capp'd towers, the gorgeous palaces,
> The solemn temples, the great globe itself,
> Yea, all which it inherit, shall dissolve,
> And, like this insubstantial pageant faded,
> Leave not a rack behind. We are such stuff
> As dreams are made on ; and our little life
> Is rounded with a sleep.

So Prospero brings all life within the category of "this insubstantial pageant faded"; [1] and Shakespeare lets honest Gonzalo give words to the glimmering notion coming to the shipwrecked court that here "in a poor isle" they all have found themselves,

When no man was his own.

Forbid it Apollo that I should suggest that this or anything else is the truth, the lesson inculcated, of this fairy piece. Yet, if disposed, we may gather from its lovely unrealities the sense that one best finds oneself by finding out the pageant nature of the world.

And so again, if one will pass an hour or two of sheer delight with *As You Like It*, one will gain a somewhat other and a gayer sense of the sweet content that may be ours when life's trappings have been taken, and in our rational or our jolly selves we find, not disillusionment, but either a quiet happiness or the vivid reality of joy. And herein there is much validity or truth.

Equal values and profound validities, seemingly of a sterner type, meet us in the Tragedies; and again values and validities are in and of each other. To illustrate. The complete adequacy of the language, the perfection of the medium of expression in *Hamlet* affords reader or audience immediate

[1] Prospero's verdict accords with his character and fortune, as Macbeth's with his when he finds life

A tale
Told by an idiot, full of sound and fury,
Signifying nothing.

pleasure as well as abiding satisfaction. But the same quality of perfect expression carries conviction and is germane to the play's validity, that is, its agreement with such tested principles of life and laws of conduct as it exemplifies. No verbal insufficiency leaves an ambiguous impression or fumbles with half-truth and fallacy. Life's puzzles are not beclouded in their statement. Solve them who may, the issues shall not sound in an equivocation. And in this clarity and adequacy of statement lies a chance of some true solution or of an equally true disclosure that such cannot be reached. Hence in the play of *Hamlet* statement itself is a first stage of truth.

Moreover, not only in *Hamlet*, but throughout the plays, besides adequacy, there is a reach and compass of expression which sets the given fact in broad, which is to say, in true relationships. Utterances are not limited to their special intent ; for the particular in them is placed in the general category ; and this lends adjustment and proportioning. But not only is each incident presented in language reaching far ; it is so put as to evoke reflections which spring, as they dramatically should, from the very fact itself, and then serve further to make clear its linkage with principles controlling human life. Thus with large truth each fact is brought into its proper relationship. Validity and truth may be said to arise from the very form and nature of such statement. Of course, Shakespeare's language, rapid, stately, always of pleasing fitness, quick with

moving imagery, is as delightful and as beautiful as it is suggestive. It rises to beauty, or descends to buffoonery, with the character of topic and speaker. God forbid that it should be natural, in the sense of commonplace, any more than Shakespeare's characters are like the people who pursue us daily. They do not exemplify all that is blatant and tiresome, but the profound and moving energies of human nature, and the delightfulness of life. They and their utterances form a world made of the interrelating truths of imagination, a world glowing in feeling, beautiful in thought.

One divines how Shakespeare conceived the relation of the drama to nature from Hamlet's "advice to the players". I will make so bold as to italicise some of the words—" Suit the action to the word, the word to the action, with this special observance, that you o'erstep not the modesty of *nature* "—the end of playing being " to hold, as 'twere, the mirror up to *nature* ; to shew virtue *her own* feature, scorn *her own* image, and the very age and body of the time *his* form and pressure [*i.e.* character]."

This is plain. I think we all know what Hamlet means, and, if the advice is good for the acting, it holds equally for the writing of plays. Perhaps the master will take us further. In the fourth Act of *The Winter's Tale* comes that flower colloquy between Polixenes—now " reverend sir,"—and Perdita, who has said,

> For you there's rosemary and rue,

but she has not cared to include the

> streak'd gillyvors,
> Which some call Nature's bastards; . . .
> I care not
> To get slips of them.

The gillyflower is said to have had an immodest reputation—yet Polixenes asks

> Wherefore, gentle maiden,
> Do you neglect them?

Perdita replies with a phrase which needs interpreting :

> For I have heard it said
> There is an art which in their piedness shares
> With great creating Nature.

She means there is an art by which gardeners assist Nature in causing the variegated hue and contour of these flowers.[1] I am not clear in my mind why "some" should have called them

[1] In Shakespeare's time people of wealth were much interested in gardens and foreign plants and often tried to develop new varieties of flowers with striking colours. "How Art also helpeth Nature in the daily colouring, doubling and enlarging the proportions of one's flowers it is incredible to report, for so curious and cunning are our gardeners now in these days that they presume to do in manner what they list with Nature and moderate her course in things as if they were her superiors." Quoted from William Harrison as of the year 1593, by Esther Singleton. *The Shakespeare Garden* (N.Y., 1922). Pinks, carnations, and gilliflowers were common ; a hint as to their treatment is given on p. 188 of Miss Singleton's book.

" Nature's bastards "—possibly because of the frequent human aid or interference in their growth, or because they were meanly regarded.

Polixenes answers Perdita with much philosophy:

> Say, there be ;
> Yet Nature is made better by no mean
> But Nature makes that mean :

As I understand these lines, Nature's creations can be bettered only through some means which Nature herself makes or suggests. Polixenes continues :

> . . . so, over that art
> Which you say adds to Nature, is an art
> That Nature makes.

The Bohemian king seems to me to say that it is Nature that gives or directs the gardener's art, which seeks to add to the beauty or to modify the form that Nature bestows, for example, on gillyflowers. He illustrates

> You see, sweet maid, we marry
> A gentler scion to the wildest stock,
> And make conceive a bark of baser kind
> By bud of nobler race.

Obviously the reference is to grafting, and Polixenes adds :

> This is an art
> Which does mend Nature, change it rather, but
> The art itself is Nature.

Perdita admitting " So it is ", Polixenes ends with :

> Then make your garden rich in gillyvors,
> And do not call them bastards.

But the damsel will have none of them. We, however, may have gathered from Shakespeare speaking in this passage that the art which shall add to Nature, whether in the growing of flowers or in presenting the drama of human life, itself is Nature, and must use the means she offers, tread in her steps and follow her pointings. This seems to be, as Hamlet advised the players, " to hold the mirror up to Nature ; to show virtue *her own* feature, scorn *her own* image ". And thus sculptor, painter, poet, in idealizing Nature, follow Nature's truth.

Thus Epic and thus Drama—and why not the short poem or lyric ? Shall that lend us joy, touch us with sorrow, stir our mood, and yet not carry truth ? —yes depths and heights and breadth of truth.

Über allen Gipfeln ist Ruh ;
In allen Wipfeln spürest du
Kaum einen Hauch :
Die Vögellein schweigen im Walde,
Warte nur, balde
Ruhest du auch.

Is not this little famous thing a breath of utter verity ? How else could you put the contents of this mood save in these very words and music ? A translation breaks the charm, and will not carry their effect or meaning. Nor will you render either the value or the human truth expressed by these lines through the methods of science or those of philosophy.

What is your substance, whereof are you made,
That millions of strange shadows on you tend ?
(Son. LIII.)

And in *Richard II.* II. 2, Shakespeare says :

> Each substance of a grief hath twenty shadows,
> Which shows like grief itself, but is not so.

No one can put either this query or this statement in other words : query as well as statement has its own truth.

> That time of year thou mayst in me behold
> When yellow leaves, or none, or few, do hang
> Upon those boughs which shake against the cold,
> Bare ruin'd choirs, where late the sweet birds sang.
> (Son. LXXIII.)

Again a mood, a valid statement, not to be otherwise conveyed.

> Not mine own fears, nor the prophetic soul
> Of the wide world dreaming on things to come,
> Can yet the lease of my true love control,
> Supposed as forfeit to a confined doom.
> (Son. CVII.)

The dreaming soul of all futurity is brought down to negative the mortality of a mortal love—an imagining quite true in its correspondence to the conviction of the enduring might of passion.

> I wandered lonely as a Cloud
> That floats on high o'er vales and hills,
> When all at once I saw a crowd,
> A host of golden Daffodils ;
> Beside the Lake, beneath the trees,
> Fluttering and dancing in the breeze.

The waves beside them danced, but they
  Outdid the sparkling waves in glee :
A poet could not but be gay,
  In such a jocund company ;
I gazed—and gazed—but little thought
What wealth the show to me had brought.

For oft, when on my couch I lie
  In vacant or in pensive mood,
They flash upon the inward eye,
  Which is the bliss of solitude,
And then my heart with pleasure fills,
And dances with the Daffodils.

I have made bold to quote this familiar poem, because it gives a true glimpse of nature, and then so truly presents the mood of responding joy which carries its echo into some late-reflecting memory.

Daughters of time, the hypocritic Days,
Muffled and dumb like barefoot dervishes,
And marching single in an endless file,
Bring diadems and fagots in their hands.
To each they offer gifts after his will,
Bread, kingdoms, stars and sky that holds them all.
I, in my pleached garden, watched the pomp,
Forgot my morning wishes, hastily
Took a few herbs and apples, and the Day
Turned and departed silent. I, too late,
Under her solemn fillets saw the scorn.

This is said to have been the author's favourite among his poems ; and the Concord philosopher may have found it a true expression of the life

which he had led—in fact, happily enough, and fruitfully for mankind.

The following by my friend John Jay Chapman may seem slighter. Yet I think it is a true expression, a symbol, of the gentle pathos which attends the passing on of the dear associations cradling our childhood :

When we all lived together
  In the farm among the hills,
And the early summer weather
  Had flushed the little rills ;

And Jack and Tom were playing
  Beside the open door,
And little Jane was maying
  On the slanting meadow floor ;

And mother clipped the trellis,
  And father read his book
By the little attic window—
  So close above the brook ;

How little did we reckon
  Of ghosts that flit and pass,
Of fates that nod and beckon
  In the shadows on the grass.

CHAPTER VIII

THE ACTIVE LIFE

THROUGH youth and early manhood, I vacillated under the calls of the Active Life and the voice of the *Vita Contemplativa*. Two sides of my nature were insisting upon realizing themselves, or functioning, and that to the full. Each strove to dominate, or be, the whole of me. It is well for the scholar or man of science to know the shifting world he lives in, to have had experience of society and even of the conduct of affairs. This is but an application of the principle that the chief functions of one's life will realize themselves the better for the efficient criticism of the rest. But it is fatal to be a Jack-of-all-Trades. Rarely will the man of affairs be more than an amateur in philosophy or science or scholarship or art, or in religion for that matter.

At all events, I was impelled to recognize this by taste and temperament as well as by the judgement of my mind. As a natural result of this decision, though I have wit, a modicum of social gifts, and self-possession in society, I have but an observer's acquaintance with it. And while I still possess a

knowledge of the law, have had some slight experience in business matters, and can be efficient on occasion, I am an alien in the busy world.

Yet I have been thrown with men of affairs ; I have always had a weakness for railroad presidents ; who could not have won through to that position without understanding their fellows as well as traffic, nor without efficiency in the handling of both. They are superior men, broader than college professors. For the rest, I admire the medical profession, preferring doctors to lawyers, and can get along with newspaper men. Schoolmasters and clergymen occasionally seem to me unsuited to the society of grown-up men. In the Century Club I have known different sorts of intelligent people, and as its secretary for seven years it was my duty to write the obituaries of men eminent in every walk of life.

What, then, are the values and validities of the practical life, the life of action ; those that may be realized by men who are not pursuing science or philosophy nor devoted to religion or art ? What value and truth are they likely to get from life, or provide for the advantage or enlightenment of others ? I mean the soldier, the statesman, the man of affairs. One factor in the result would be the human faculties employed. Another would be the stuff the man works in, the circumstances and play of things and forces in his field.

Undoubtedly soldier, statesman, banker, merchant, manufacturer or farmer, will need to make broad use of his mind, its reasoning faculty, its

perceptions and intuitions. This catholic functioning will include feeling and emotion. Mingling with these will chime his instincts, the fundamental chords of his nature, which respond to his physical constitution. All these may work together, conditioning, assisting, modifying, correcting each other.

Surely a catholic working of faculty is evoked through the exigencies of the active life, sufficient to sustain the credit of whatever values may be won or validities be reached. But what sources of value are presented to such manner of life? what truths can be discerned amid the whirring of its wheels? Can such mode of life perceive truth and grasp it? At all events, the actor's intuitions and reasonings must fit the contours, meet the exactions of the outer actuality in which he moves—or his career may fail to win either validity or value.

The values or satisfactions of the active life lie open to common experience and have been judged in books. Saints and sages and all people that are called good would generally agree that, since mankind is social and each individual in some way a part of a family and a society, the values or satisfactions which he strives to realize will not prove permanently gratifying if he seeks to limit them to himself. Their effect upon others must be considered. Whoever, as a thief or robber, trespasses on others' happiness or violates their commonly accorded rights will not be securely or permanently happy.

Biology and physics bear out these ethical con-

clusions : the cell is an individual as well as part of an organism in whose life its own life is involved. So is the individual man or woman, and must conduct his life or hers with regard both to self and the society of which he or she is part. This apparent duality of regard is really a unity, a symbol of the individual life that can be lived only in dependence and co-ordination ; which is true in philosophy as well as science. There can be no self, mental or corporeal, apart from relationships to the spiritual and physical environment. The biological analogies of cell and organism hold between organisms and environment. Does not the organism with its environment—why not with the entire universe ?—make a system or super-system ? And how could there exist a finite single ego without others ? even without the environment or data of all nature ? Without its kingdom the mind could not be itself.[1]

[1] The text puts the matter generally and ideally. In fact, the world cannot rid itself of what is called evil so long as life is bound up in individuality. For individual life is subject to all sorts of accidents ; and the realization of its own values and validities involves conflict with other individual lives, or between the interest of some small group and the larger groupings of society. Moreover, the further individual life develops, the more specific as well as manifold will be its insistence upon realizing its individuality.

The conflict is complicated, or bifurcated, by sex and sexual love and passion. Though the individuality of the male draw the female, and *vice versa*, neither can merge in the other : the self-assertions of two incompletely reciprocating individualities persist. Yet this partial union is a culmination. It is an end which must be reached if the race is to continue, and a goal

Likewise as to the question whether in every act the motive must be the pleasure or welfare of the doer, or whether it may not be the welfare of another. To answer this, we must keep in view the whole nature of man and the broad range of impulse and faculty. In any given act there functions some element of the doer's nature, but by no means the whole. If his nature includes phases of his mind

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for the individual as well, since, in such partial union, he or she will find an enlargement of faculty and a realization of otherwise unattained values and validities.

One may hold that it is best for the individual to use his faculties and develop himself in such manner as not to impede the functioning of other individuals in the realization of their values and validities, or, better, so as to help others realize themselves—inasmuch as individuals depend for their welfares so largely upon the functioning of the community. This may not always seem possible ; but one must view the matter in its far effects upon both the individual and society. The Christian solution is that by giving oneself in love of God and fellow-man one " saves his soul alive ", or realizes himself most fully—which may also be the way of earthly love between the sexes.

Perhaps one still may hold that the world we live and move in is the best possible world. For this very conflict or interplay among self-assertive individualities, and between them and the communal interest, may lead to the fullest development of all concerned. The biological, social, and spiritual progress, rising through this age-long conflict and partial accommodation, may be the very way in which the prior and cumulative qualities of individuals and society too are brought to fullest action and expression in values and validities. The acquirements of both race and individual may best be conserved and added to through this very interplay or conflict.

which have his own advantage for their conscious aim, it also includes impulses or instincts which aim directly at the good of another. An act calculated to promote another's welfare may or may not be grounded in a selfish motive. One may do much for another with a view to one's own comfort. But is it not fantastic to find a selfish motive in the act of a mother snatching her child from the wheels of an automobile? Yet her happiness is bound up in the child's safety, and her act makes for her peace of mind. An utterly indifferent stranger might act in the same way to save the child.

Another test, complementary to the relationship of the individual to the community, applies to the active life as well as to the life of thought. Does the activity in question and the sought-for end make for the betterment of the entire self and especially for the strengthening of its distinctively human qualities? This test, like the other, has been recognized for ages.

The truth presented by the active life is that of actuality; yet, like all actuality, it has illustrative value. The deepest truth of an organism is its life, the whole fact that it lives and functions, even to the limit of its powers of action and growth. It must live and function pursuant to its nature and in accord with its environment. The life of soldier or man of affairs presents the greatest actual truth when it so conducts itself as to carry out its powers in actions, bringing its potencies to actualities. To this end it must square its course with its surroundings.

In this way the Active Life will also present its broadest illustrative truth, and will reach a correspondence with the truth presented through poetry, sculpture, painting, and music. As the work of art is created in truth, the active life is to be led in accord with the same general validities. Then it will present both the simple truth of concrete fact and that broader or generalized aspect of truth which is correspondence with the steady currents of actuality or fact constituting human experience.

I am tempted to include in the Active Life love between the sexes, since this does not come under Science or Philosophy, or even under Art or Religion —though it may lend wings to whatever capacity for religion or talent for art the lover have. *Homo sapiens*, the spiritual animal, is most profoundly differentiated in the two sexes, and, as it were, distributed between men and women. Both are unutterably human. It is ordained, through natural law or by the good God, that they should help each other, and that the love of a man should draw the woman up to him, and the love of a woman should draw the man likewise on and liberate his nature.

Most marvellously it is the need and love of all that is different and of all that is the same in each other that makes the tie between them so complete. I will not discourse of these differences, which each man or woman perceives and determines differently according to his or her individuality. Their discovery is part of the charm of life. Blessed be sex!

As for that which each would find the same in the

other, I think it chiefly is loyalty, which is a kind of reciprocation. The more one loves, the more one expects or hopes for loyalty in the other, and the more one is pained at its lack. I am speaking of fine natures.

As to love's value and truth, they are functions of the lover. The adorableness of his beloved (or hers) is a functioning of his own qualities (or hers) ; a realization of the lover's self in the sense heretofore spoken of. The beloved must be such as to incite and call forth the action of the lover's faculties of loving, and their flowering in beautiful values.

So with love's validities or truths. Love is a great fact, a truth. It intuits, feels or knows what it desires, what it loves ; and it loves in truth, that is in reality. Dispassionate discrimination is not ascribed to lovers. Rather in all truth the lover loves what he finds, or imagines that he finds—this is all one. The lover still loves truly, since love is a right and well-warranted passion for whatever is lovable or is found so by the lover. Love's truth is irrespective of what is discerned by other people's analysis or judgement. That is another matter, which in time the lover also may discover. Doubtless there will result a strengthening or a qualification of his or her affection—of the tie between *amans* and *co-amans* as the old French Latin put it.

On the whole, love as a function and realization of self—as a value and as a validity—seems to ensconce itself within the compass of the Active Life. The Active Life may well embrace it as a

very frequent part of itself, inseparably interwoven with its activities and aims, and likely to enhance its worth and vigour, even as love will enhance the worth and vigour of a life passed in Art or Science or Philosophy.

CHAPTER IX

THE WHOLE MAN

In the two or three years after leaving Harvard I read a good deal of Goethe. After the lapse of forty years, I am even more impressed with the breadth and wholeness of his vision. I think Matthew Arnold said that Goethe " saw life steadily and saw it whole ". This means or should mean not merely that his vision embraced every side of life, but that the energetic unity of his mind made the entire range of his experience into a living whole which was himself. Even his fancies, the shapes and forms of an imagination so often stirred by the passion of love, turned to the increase of that human unity, that intensive individual, who was Wolfgang Goethe. Quite consciously he sought to unify knowledge and feeling. Whatever he apprehended intellectually he would make into his very self by feeling it and living it.

Goethe's wonderful *Italienische Reise* often reminds me of Darwin's equally admirable *Journal of the Voyage of the Beagle.* Whatever Darwin notes down appears as linked in his mind with other phenomena

of Nature. The general seems to present itself in each incident, and even to exhibit the reason or natural law of the occurrence. I feel the thought behind every entry in that Journal.

Goethe, poet, artist, as well as genial amateur of science, is, in his *Italienische Reise*, far more consciously intent than Darwin upon transmuting all his impressions and his growing knowledge into the substance of his nature. He will experience vitally whatever he apprehends.

He writes in Rome, June 16, 1787 : " Mir geht es sehr wohl, ich finde mich immer mehr in mich zurück und lerne unterscheiden, was mir eigen und was mir fremd ist. Ich bin fleissig und nehme von allen Seiten ein und wachse von innen heraus."

Ten days later : " Ich will auch nicht mehr ruhen, bis mir nichts mehr Wort und Tradition, sondern lebendiger Begriff ist. Von Jugend auf war mir dieses mein Trieb und meine Plage. . . ." And upon receiving the volumes of his Works already written—" diese Resultate eines halben Lebens "—he adds, " Ich kann wohl sagen : es ist kein Buchstabe drin, der nicht gelebt, empfunden, genossen, gelitten, gedacht wäre, und sie sprechen mich nun alle desto lebhafter an. . . ."

At this very time in Rome he was explaining to a friend " mein Pflanzensystem " and thinking of the metamorphoses of plants. He had botanized eagerly in his travels, always looking for the *Urpflanze*, the original plant form. In Rome he

turned to the study of the human body, and was already speculating about colours—he had always been trying to paint. Intellectual absorptions, along with his devotion to antique art and alertness to the life about him, make his *Italienische Reise* a symbol of the union of human interests, or, better, the unity of human functioning, in the nature of a great man. Goethe compassed even the Active Life ; he had most capably administered the ducal estates of Weimar. As for science, he constantly followed its paths, and throughout his scientific labours, just as fruitfully as when composing *Faust*, he found links and relationships and realized the wholeness of life. He is the modern exemplar of the whole man, the complete human being.

The constituents of human nature are in the race, which in all its branches evinces a biological unity and similar psychic processes. Human reactions to the natural environment are analogous, and forecast the stages through which all tribes appear to pass, in so far as they do pass. Everywhere men have projected a crude self-consciousness into the world without, imagining the actions of its storms and stocks and stones to be in some way as their own. They have like thoughts of injury and disease. Religions, as well as moral codes, have common elements. Sun, moon, and ancestors have everywhere been worshipped, and food and weapons buried with the dead. And everywhere men have used and still must use the same physical

images to indicate psychic facts—an upright man, a crooked action.

Throughout the exhaustless tale of endeavour and manifold interrelationship making the history of mankind, are found like traits and impulses and desires, but, of course, with infinite differences. Out of the unspeakable welter of conduct and interests we disentangle types or categories of intellectual and spiritual effort. They work themselves out in distinguishable forms, which have been mapped and schematized as science, philosophy, religion, poetry and art, and the various phases of the active life. They are all functions of humanity or states of its psychic processes. They constitute human life in its self-fulfilment. As factors of an ideal whole they are related to each other ; not as physical parts, like segments of a circle, but as interworking modes of mental or spiritual and bodily functionings.

The phases, tendencies, appetitions of the race are seen in individuals. A thoughtful man may be curious as to phenomena and seek to understand them. He may then be stirred by the inadequacy of his perceptions. His mind will turn back on itself, and look to its own insistent and shaping processes. He would think things out.

Such obvious beginnings of science and philosophy tally with two intellectual methods, between which various relationships occur. Either may turn to the other for assistance, or may criticize and disagree. They take colour from each other, and

mutually adapt themselves ; or one qualifies the other and sets bounds to its validity. Neither can accept the other as representing the whole range of psychic faculty or as the sole avenue of knowledge.

But these two are not all. Humanity has other yearnings, other impulses. It would reach out beyond itself for further completion. It has also some sense of impotence, some sense of fear, and must look for a power to propitiate or cling to. The mind cannot discover and know everything either through observation or reflection ; cannot grasp the overpowering or penetrate the impenetrable. Fearful as well as blind, the human spirit looks without for enlightenment or sustenance and love. Enter religion — it was there from the beginning.

It is another function and responds to another set of needs. Religion is vague or concrete, and extremely varied. It reflects the man's mental equipment, his character, his temperament. Nor is it alien from the tendencies which have resulted in science and philosophy. The three have part in each other, yet are distinct enough to disagree or criticize or approve. Religion feels the inadequacy of science and philosophy ; would substitute some warmer value, some surer validity. Science may jeer or may silently acknowledge religion's value ; while philosophy will try to place religion in rational categories, since the impulse toward ultimate consideration applies itself to all large and serious interests of the mind.

So, instead of two, we have three mutually conditioning or perhaps limiting constituents or functionings of the mind. But science and philosophy, even with religion, are not the fulness of life. Men will devise and create further expressions of themselves in poetry and art. Any one of these may criticize or limit another articulately, in the manner I have been speaking of; or one may limit or even reprove the others passively, just by being there in silent reminder of itself. The latter is not the usual form of admonition as between science, which seeks to be explicit, and philosophy which seeks to formulate. But religion may be more tacit, a shade crossing the other's track, or a sunlit cloudbreak. As for poetry and the plastic arts, they present their creations for what they are, and properly with no word of approval or dissent touching other ways of expressing truth. A poem, a statue, stimulates, suggests, condemns through its presentation of its own qualities. So without sermons art asserts its values and verities. And the deepest religious conviction will not preach save as its nature, just as the nature of love, forces it to utterance, or compels it to denounce whatever counters its certitudes. It may then strike at science, philosophy or art.

Finally, the active life in any of its forms, including sexual love, may through its own virility and success either corroborate or disprove some scientific conclusion or philosophic tenet, or may refute a creed. The man of affairs brings to his business the general acceptances of his time, scientific, ethical,

religious. They affect his plans and enter his work, in which his opinions and abilities realize themselves. His work does not argue with other ways of thought and effort. It looks to its own ends and brings them to tangible results. Its realization in results and more palpably the results themselves are what the active life presents as a test or criterion of any doctrine of science, philosophy, or religion.

Thus it seems to me these various modes of life criticize or confirm or limit one another. They set the measure of humanity, which doubtless no individual attains. Yet the individual may strain toward it, and not look at life through a knot-hole, but rather with what I am tempted to call the whole vision, which is both whole and comprehensive. It becomes whole through the concurrence of one's entire nature. The conclusions of a philosopher, the creations of art, should spring from the whole nature, the united faculties of philosopher or artist. Only I wish I saw more clearly how it is that an act or judgement may be of the whole man, and spring from feeling and intuition as well as reason. It is still beyond me to see just how feeling or intuition unites with reason in one psychic function. Yet they do work together, or at least join effectively. Only too often feeling draws the action of the rational judgement within the currents of its impulses. The two concur in the result, though they may not have reached it through the same process. But who knows quite what he means when discussing the faculties and phases of the psyche? They are

elusive and mysterious. The sources of the activity we would understand are hidden. We talk and define in terms of that which we are seeking to define—a lifting oneself up by one's own bootstraps.

As touching the comprehensiveness or universality of the whole vision, it is easier to speak without equivocation. May not the outlook of the individual embrace all avenues through which men have pursued worth and truth? Should not the mind find worth and truth in any field of human attainment? Though an individual cannot do mankind's task, no achievement need be alien either to his feeling or his understanding. They are all phases of humanity's self-realization. He may discern its unity in the mirror of his own endeavour, and find that the ways of seeking worth and truth not merely supplement but confirm each other.

Scientist and philosopher, seeking the truth of the middle distances or the furthest reaches, are brothers to the religious seer, who would cleave the sky of God in other fashion. The poet, the artist, flings himself toward beauty and toward truth, and in his endeavour wins it, even as scientist, philosopher, and seer win in their endeavour. A great man of affairs is no unfit companion to them. These endeavourers move shoulder to shoulder, although differing in the form and manner of their energies.

The goal of science, philosophy, religion, art, may be one, since all strive for value and verity. These lie in human functioning. Endeavour for worth,

beauty, and truth is its own fulfilment and in itself a bond of unity, however discordant seem the various aspects of the quest.

Again I do not quite understand, though I feel the oneness of human endeavour in my own striving nature. From plant to man all organisms exemplify life's universal affinity, perhaps identity. Biology has taught us this. May we not find the same affinity in the manifestations of life at its human best, struggling for light and beauty? The whole vision sees the vistas of achievement melting into one. There are but casual divisions in the fields of knowledge or the phases of appreciation. Philosophy uses science, and science needs philosophy. Their variance with religion may be but a surface murmur, beneath which rolls a profounder harmony. Parallel paths sometimes join. Along any one of them, through different scenery and over different obstacles, men travel on to knowledge and to God.[1]

The whole vision is transcendent: it looks beyond, using the intuitions of art, the rapture of religion, the statesman's judgement, the scientist's imagination, the philosopher's reason and the lover's love. As faith in whatever we supremely care for, it supplements our little knowledge with far-sighted

[1] I find this impulsive jotting in my note-book: "It is all the same—especially as one grows old and uses philosophy, if not religion, more constantly—yes, the best and truest of Buddhism and Confucius, of Democritus, Plato, Aristotle, Stoics, and Christ and Paul, is all true and applicable to our sustenance."

confidence. It lifts our minds over small incomprehensibilities and extends them beyond the dilemmas of limited relationships and trammelled conclusions. It is the human reflex of God's vision. We think Him as the inspirer and enabler of knowledge, art and religion—all of them paths to the good and true —and as Himself the fulfilment of them all. In man the whole vision is God, the Divine in the Particular which draws every inquiry, every thought, every impulse, every act out beyond itself and joins it to the whole.

As always heretofore, this vision must still be in and of the ever-moving present. It must to-day embrace the new flux of the universe without and the living self within. It must be dynamic like the electric world and evolutionary like the slowly shifting species of organisms, and relativist too. Yet I doubt that it will content itself with selfless congeries of experience and behaviour, or find enough in them to make a working individual. It may still seek the soul of man, and see it somehow fixed to the wheel of eternity—though neither stars nor earth be stable. Though the contents of the vision alter, it will persistently behold the relationship of all it compasses to an enduring past and realize its own truth to future forms.

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